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A SURVEY OF CHRONIC DISEASE BY MEANS OF THE SZONDI TEST

by Mary Margaret McQuade

Thesis presented in the Faculty of Arts of The University of Ottawa through The Institute of Psychology as partial requirement for the degree Doctor of Philosophy.

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CURRICULUM STUDIORUM

Mary Margaret McQuade was born in 1910 at Beaverton, Ontario. She was graduated in 1930 from Queen's University in Classics. On presentation of the thesis, The Deus Ex Machina in Greek Tragedy, she was granted the Master of Arts degree in 1933.

That year she was also graduated from Ontario College of Education.

In 1948 at University of Western Ontario she received the degree Doctor of Medicine.

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INTRODUCTION

Throughout the past three centuries structural approach to the study of the individual revealed details of architecture, and techniques of physics and chemistry made evident mutual adaptation of the parts. As a result the human organism came to be regarded as if it were, in actual fact, a machine. If it failed to function properly, the cause of the breakdown was considered to be a fault in one or more of the component bits and pieces.

A great impetus was given to the scientific understanding of environment when the technique of bacteriology was discovered and applied. Fevers which had been held to be caused, in the mechanistic sense, by internal derangement of chemistry were recognized as reactions to microorganisms.

With the growth of chemistry still more diseases became causally related to external agents. Peripheral neuritis, for example, came to be understood as a reaction at times to certain chemical factors such as lead and alcohol.

Walter Cannon was the man to eventually form the bridge between physiology, medicine and psychology. Within the last fifty years illnesses, previously grouped under the heading of general medicine, have been recognized as

responses, in large part, to psychological factors of the environment. Writer's cramp is no longer a disease of the muscles, or simple tachycardia a disease of the heart.

A mechanism by which the occurrence of disease can be explained has lately been advanced by Selye, following closely upon the therapeutic trials initiated by Hench and Kendall.

By this theory of General Adaptation, the resistance of an individual to pathogenic agents is dependent to a great degree on the excess production, under-production or abnormal production of adreno-cortical hormones. During emergencies the rate of their secretion appears influenced by the presence of adenosine triphosphates and potassium,[1] but normally it appears controlled by the amount of ACTH (adrenocorticotrophic hormone) secreted by the anterior lobe of the pituitary gland. When the body is under stress there is increased utilization of cortical hormones by the tissues, and therefore low blood levels of these hormones. The low level is thought to stimulate the pituitary, through receptors perhaps in the anterior lobe or in the hypothalamus, to release ACTH.

In conjunction with this, other factors operate in the development of any lesion. Age for instance. A weight

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1. Vogt, Marthe, Regulation of Secretion of Cortical Hormones in British Medical Journal, Vol. 2, issue of [illegible], 1950, p. [illegible].

falls equally on the legs of a man aged 30, and on his father aged 80.[2] The son responds by suffering slight discomfort and a superficial bruise, the father by severe pain and fracture of both legs.

Heredity begins to operate at conception, as does intra-uterine physiology.[3] The interplay of these two factors may profoundly affect the future susceptibility to illness of the growing organism. Mental strain in the mother may be reflected in bodily changes that tend to hinder its growth and to promote marked physiological and behavioral characteristics after the child is born.

Stress, in a sensitized individual, it is postulated, results in an increased production of adreno-cortical hormones. Prolongation of stress, with prolonged over-production of corticoids, produces disturbances in the body chemistry, and if sufficiently extended in changes of tissue structure. These results are clinically recognized as evidences of disease.

Hormonal effects, and hence the diseases they help to cause, have been counteracted temporarily by righting the

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2. Halliday, James L., Psychosocial Medicine, New York, W.W. Norton, 1948, p. 25.

3. Dunbar, Flanders, Your Child's Mind and Body, New York, Random House, 1949, p. 186.

disturbed hormonal balance. No means has, however, been found for continuing this therapy without the risk of unpleasant or even dangerous side-effects.[4]

Surgical attempts to smother the effects of the disturbed body state also provide, in many cases, immediate relief from symptoms - they are also followed by unsatisfactory results, at times, because of the continuance of the causal stress.[5]

The fundamental approach to effecting clinical recovery has been the effort to remove the pressure of the stress. Clinicians have long been cognizant of the importance of psychological factors in promoting relief from symptoms and complete rehabilitation. Since all men are beset with tribulation, the problem has been to discover just why certain individuals find living exceptionally trying.

Ruesch studied carefully hospital patients who had not recovered from their ailments as quickly as their doctors expected.[6] He found that, with the use of the Minnesota

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4. Habif, David V., Clarence C. Hare and Gilbert H. Glaser, Perforated Duodenal Ulcer Associated With Pituitary Adrenocorticotropic Hormone (ACTH) Therapy in Journal of American Medical Association, Vol. 144, No. 12, issue of November 18, 1950, p. 996.

5. Daniels, G.A., Perforation of a Duodenal Ulcer Fifteen Months After Vagotomy in Lancet, Vol. 258, No. 1, issue of March 4, 1950, p. 398-400.

6. Ruesch, Jurgen, et al., Chronic Disease and Psychological Invalidism in Psychosomatic Medicine Monographs, Monographs, No. 2, 1946, p. 173.

ultiphasic Personality Inventory, they could be divided into groups with poor, indifferent and good prognosis. The first had peaks in depression and schizophrenia. These abnormal scores dropped after psychotherapy.

This suggests that the personality pattern of the patients might be a factor in their long convalescence, and, if they were suffering emotional stress, related somehow to their susceptibility to disease.

The present similar study, with the Szondi test, was conducted for two reasons - first, to determine whether or not any personality pattern could be discerned, common to the individuals suffering from several prevalent chronic diseases; second, in the event that common personality factors were found, to attempt an explanation for their development. It was hoped that by this method some inkling might be discovered concerning the nature of the stress that they suffered, and some means formulated to effectively forestall or combat it.

How about a summary presentation of what is coming?

CHAPTER I

THE GENERAL-ADAPTATION-SYNDROME

The autonomic nervous system governs the activities of cardiac and smooth muscle, of digestive and sweat glands, and of certain endocrine organs - processes that normally are for the most part unconscious and beyond voluntary control.[1]

Through these activities it maintains the constancy of the environment of the body's cells; it serves to combat those forces which, acting either from within or from without, tend to produce variations in this environment. The regulation of the composition of the body fluids, of their temperature, quantity and distribution, is effected through the action of autonomic nerves upon circulatory, respiratory, excretory and glandular organs.

In the middle of the Nineteenth Century it was observed by Claude Bernard that this constancy of the milieu intérieur must be preserved in order to maintain life.[2]

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1. Best, Charles Herbert, and Norman Burke Taylor, The Physiological Basis of Medical Practice, Baltimore, Williams and Wilkins, 1945, 4th edition, p. 943.

2. Bernard, Claude, Lecons de pathologie experimentale, Paris, J.B. Bailliere et fils, 1880. Cited by Hans Selye, Stress, Montreal, Acta, 1950, p. 2.

Subsequently Walter Cannon introduced the word "homeostasis" to denote the nature of the internal environment.

> Everywhere inside the lifeless layer of skin which covers us, the organs and tissues are set in a fluid matrix. . . . So long as this personal, individual sack of salty water, in which each one of us lives and moves and has his being, is protected from change, we are freed from serious peril. Because that protection is afforded by special physiological agencies, I have suggested that the stable state of the fluid matrix be given the name homeostasis. [3]

In addition to the autonomic nervous system, he directed attention to adrenaline (the hormone of the adrenal medulla) as being involved in intricate reactions that are intended to maintain constancy during certain emergencies. [4]

Hartman and his co-workers, after experimenting with extracts made from the adrenal cortex, presented in 1932 a "general tissue hormone" theory of the corticoids. [5] They concluded that cortical hormone is necessary for the function of all cells, since it raises the resistance of the

---

3. Cannon, Walter B., Stresses and Strains of Homeostasis in American Journal of Medical Sciences, Vol. 189, No. 1, issue of January 1935, p. 1.

4. --------, Bodily Changes in Pain, Hunger, Fear and Rage, New York, Appleton, 1915, p. 311.

5. Hartman, F.A., K.A. Brownell and J.E. Lockwood, Cortin as a General Tissue Hormone in American Journal of Physiology, Vol. 101, 1932, p. 50. Cited by Hans Selye, Stress, p. 2.

tissues to infection, combats fatigue of muscles and nerves, and maintains the normal temperature and hydration of tissues.

In 1936 it was noted by Selye that animals exposed to a variety of non-specific damaging agents respond with a discharge not only of adrenaline but also of adrenal cortical hormones.[6] Simultaneously their resistance to numerous damaging agents is increased. The most striking feature of the response is its extreme non-specificity. Any stress is apparently met by an increased discharge of corticoids. This suggests that in man also perhaps the systemic diseases, all the stresses of normal life, are met by a similar defensive corticoid production. It would seem to be a fundamental adaptive reaction of vertebrate organisms.

How the adrenal cortex was alerted was not at first obvious, for surgical intervention of the nervous and endocrine systems failed to prevent its activation. It was observed, however, in 1937 that if the pituitary gland is removed animals no longer respond with an adreno-cortical secretion even when exposed to severe lethal stress. At

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6. Selye, Hans, A Syndrome Produced by Diverse Nocuous Agents in Nature, Vol. 138, 1936, p. 32. Cited by Selye in Stress, p. 3.

the same time the resistance of these animals falls to a very low level.[7] It was postulated that normally exposure to stress causes both shock and counter-shock phenomena. Where the pituitary is removed the signs of damage are more severe than usual, and most of the defensive changes do not occur.

It was suggested in 1940 that a promising way to treat the stress factor of disease would be to imitate physiological counter-shock phenomena by administering supplements of Adrenocorticotropic Hormone or corticoids when required to support the natural systemic defence reaction.[8] In addition to eliminating pathogens by surgery drugs, sera or rays, one might make the human body indifferent to their damaging actions.

Later it became evident that under certain circumstances increased endogenous production during stress, or exogenous administration of ACTH or corticoids, could in itself be the cause of disease.[9] This finding led to the

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7. Selye, Hans, Studies on Adaptation in Endocrinology, Vol. 21, No. 2, issue of March 1937, p. 169-188.

8. --------, C. Dosne, L. Bassett and J. Whittaker, On the Therapeutic Value of Adrenal Cortical Hormones in Traumatic Shock and Allied Conditions in Canadian Medical Association Journal, Vol. 43, No. 1, issue of July 1940, p. 1.

9. --------, Role of the Hypophysis in the Pathogenesis of the Diseases of Adaptation in Canadian Medical Association Journal, Vol. 50, No. 5, issue of May 1944, p. 486-433.

formulation of the theory of the General--Adaptation--Syndrome (G-A-S) and Diseases of Adaptation.[10]

Two definitions must be accepted as a basis for its understanding.

Systemic stress is a condition in which, due to function or damage, extensive regions of the body deviate from their normal resting state.

The Alarm Reaction is the sum of all non-specific phenomena elicited by sudden exposure to stimuli which affect large portions of the body, and to which the organism is quantitatively or qualitatively not adapted. Some are merely passive and represent signs of damage or shock, others are manifestations of active defence against damage. In event of moderately severe stress, from which recovery is possible, the signs of injury usually precede the appearance of defence phenomena. Therefore the Alarm Reaction may be divided into two phases.

The first, the phase of shock, is characterized by hypothermia, hypotension, depression of the nervous system, decrease in muscle tone, haemoconcentration, deranged capillary and cell membrane permeability, generalized tissue

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10. Selye, Hans, The General Adaptation Syndrome and the Diseases of Adaptation in Journal of Allergy, Vol.17, No. 4, issue of July 1946, p. 231-247.

breakdown, acidosis, hypochloremia, hyperkalemia, transitory rise followed by a fall in blood sugar, leukopenia followed by leukocytosis, eosinopenia, and acute gastrointestinal erosions. The stage varies from a few minutes to 24 hours, the duration varying directly with the severity of damage inflicted. The discharge of adrenaline, ACTH and corticoids begins during this shock phase but is actually characteristic of the counter-shock that follows.

In this there is enlargement of the adrenal cortex with signs of increased activity, involution of the thymicolymphatic apparatus and generally a reversal of most of the changes seen during the shock period. It is largely dependent on the discharge of corticoids into the blood and, in the event of chronic exposure, merges into a stage of Resistance.

The latter is defined as the sum of all non-specific systemic reactions elicited by prolonged exposure to stimuli to which the organism has acquired adaptation. It is characterized by an increased resistance to the particular stressor agent to which the body has been exposed, and a decreased resistance to other stimuli. Most of the morphological and biochemical changes of the Alarm Reaction disappear, and in some instances the direction of deviation from normal is reversed. There is the impression that during this stage adaptation is acquired at the expense of resistance to other agents.

Even a perfectly adapted organism cannot indefinitely maintain itself in the stage of Resistance. If exposure to abnormal conditions continues, adaptation wears out and the stage of Exhaustion begins. This is the sum of all non-specific systemic reactions that ultimately develop as a result of prolonged over-exposure to stimuli to which adaptation has been developed but can no longer be maintained. Many lesions characteristic of the Alarm Reaction re-appear, and further resistance is impossible.

This whole response, of which the Alarm Reaction, the stage of Resistance and the stage of Exhaustion are three successive stages, is known as the G-A-S. This is the sum of all non-specific reactions of the body which ensue upon long-continued exposure to systemic stress. One of the most important observations is that many of the morphological, functional and biochemical changes elicited by various systemic stressor agents are essentially the same, irrespective of the nature of the eliciting stimulus.

The diseases of adaptation are those maladies caused by an abnormality of the adaptation process itself or to maladaptation. These can be further sub-divided into three groups due to hypo-adaptation, hyper-adaptation and dysadaptation respectively,- that is, an insufficient, excessive or an abnormal adaptive reaction.

Since all diseases are the result of a conflict between the organism and a pathogenic agent, except in the case of instant death some manifestations of the G-A-S accompany all pathological processes. To arrive at a useful division, one separates from the other diseases those whose signs are so preponderantly due to abnormal adaptative reactions that the direct consequences of the eliciting pathogenic agent assume a secondary position. In them the abnormal response to the agent is the major cause of the illness.

They include certain metabolic derangements, gastrointestinal disorders and cardiovascular diseases, which, being relatively uncommon in primitive societies are often called Diseases of Civilization. Allegedly their development is promoted by stresses inherent in civilized life to which the hypothalamus-pituitary system can not adjust itself adequately. Defensive endocrine response is useful in raising resistance but endogenous over-dosage with corticoids results in disturbed function and modified structure.

Locally applied non-specific stress affects most targets in a manner similar to the G-A-S. Hence it is not unreasonable to assume that the actions of local and systemic stress can be cumulative, thus selectively concentrating their damage in a certain organ . Under continued stress the weakest part of the body shows the result of

strain. Thus hereditary factors may determine the organ or body system that late in life shows damage.

In addition, numerous factors, diet for example, can specifically sensitize the body, to make it more susceptible to stress than otherwise it would be.

One is inclined to wonder, among persons who have responded to stress in an identical manner, whether there is any similarity between the stresses to which they have been subjected. One questions whether there is any common personality factor that tends to make them respond to stress in a similar fashion.

To clarify these points an investigation was carried out. Summary of procedure?

CHAPTER II

METHOD OF INVESTIGATION

Arrangements were made at two general hospitals to see all public patients between the ages of 15 and 60 years. Permission was obtained to see also patients of the same age group at two Sanatoria for the tuberculous and at a Veterans Pavilion.

Patients were of approximately the same socio-economic and educational level.

They suffered from musculo-skeletal, respiratory, metabolic, cardiovascular, haemopoietic and gastro-intestinal disorders. In each case the diagnosis was approved by a senior member of the Attending Staff as well as a member of the Interne staff.

Procedure.

The personality pattern was studied in patients who belonged to the following groups.-

1. Control group under treatment for minor surgical conditions, mild acute respiratory conditions, or mild traumatic conditions. (15)

2. Non-specific atrophic arthritis. In most of these cases there was an established diagnosis of rheum-

atoid arthritis. These are indicated throughout this report by the general term "arthritis." (15)

3. Bronchial asthma. (7)

4. Diabetes mellitus - indicated throughout by the general term "diabetes." (15)

5. Essential hypertension - indicated throughout by the general term "hypertension." (15)

6. Pernicious Anaemia. (15)

7. Rheumatic Heart Disease. (15)

8. Thyrotoxicosis. (15)

9. Pulmonary Tuberculosis - indicated throughout by the general term "tuberculosis." (15 from each Sanatorium)

10. Duodenal or gastric ulcer - indicated throughout by the general terms "peptic ulcer" and "ulcer." (15)

11. Chronic Chest disease, for the most part Chronic Bronchitis or early Bronchiectasis, indicated throughout by the general term "chronic chest." (15)

12. Dyspepsia of non-ulcer type - indicated by the general term "dyspepsia." (7)

13. Non-articular rheumatism, psychogenic rheumatism, or muscle spasm - indicated throughout by the general term "muscle tension." (7)

14. Obesity. (7)

15. Chronic alcoholism - indicated throughout by the general term "alcoholism." (7)

16. Anxiety state - indicated throughout by the general term "anxiety." (15)

17. Reactive depression - indicated throughout by the general term "depression." (15)

To each of these patients, in the order in which they presented themselves at the hospitals and in random order at the Sanatoria, the Szondi test was administered once by the same individual.

The profiles of the members of each group were studied merely for the purpose of detecting the nature of the strong unconscious driving forces common to the members of the group. No detailed interpretation of any one individual or of any one group was made.

Control Groups.

Comparison was made between the following groups.

1. Young and Old (on the average at least 20 years older)
2. Male and Female.
3. Civic Hospital and General Hospital.
4. Civic Hospital and Veterans Pavilion.
5. General Hospital and Veterans Pavilion.
6. Civic Hospital bed patients and Civic Hospital Ambulant patients.
7. General Hospital bed patients and Civic Hospital Ambulant patients.
8. Veterans Pavilion bed patients and Civic Hospital Ambulant patients.
9. English-speaking and French-speaking.
10. English-speaking and mixed controls.
11. French-speaking and mixed controls.
12. English-speaking and English-speaking controls.
13. French-speaking and French-speaking controls.
14. Royal Ottawa Sanatorium and St. Laurent Sanatorium.

Ambulant patients were tested at the Civic Hospital in the order in which they presented themselves so that the numbers of individuals in each group could be equalized during the time that was available for the survey.

Statistical Method.

The method of Leon Festinger was used for finding the significance between Means without reference to the frequency distribution function. (Psychometrika, Vol. 11, No. 2, issue of June 1946, p. 97-105.)

Table XXV indicates that the method does not reveal fine differences, but is useful.

Since the test is not designed to check on the consistency of reaction in an individual from day to day,[1] the Pearson r has here no meaning, and was not calculated.

Reliability and Validity.

A test-retest was done on a mixed group by administering the Szondi Test on two occasions separated by a period of at least twenty-four hours and not more than seventy-two hours. No significant differences were found between the profiles.

Comparison of the profiles of the patients at two Sanatoria revealed no significant difference that could not be explained by reference to racial origin.

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1. Deri, Susan, Introduction to the Szondi Test, New York, Grune and Stratton, 1949, p. 15.

These two comparisons were made merely to establish a minimum of confidence in the reliability of the test, and the results must be taken in conjunction with the results of all other comparisons between groups to have meaning.

The second comparison also served to establish some confidence in the validity of the test.

In the absence of available statistical norms further attempts to establish validity were made by comparing the Szondi profiles with

1. Profiles of patients, who were suffering the same diseases, made with the use of the Rorschach Test and the Bernreuter Personality Inventory.

2. The clinical impression of patients who suffer from these diseases.

3. The impression of psychoanalysts who have conducted analyses on patients suffering from these diseases.

First Choices

All subjects selected the four cards that they liked most, and the four that they disliked most. (See Appendix 2). Inasmuch as the data obtained by this procedure did not aid in forming up a personality pattern, and appeared to contribute nothing consistent with the remaining data, it was not utilized.

In presenting the Szondi profiles, some use is made of vocabulary peculiar to Lewin's theory of personality. Similarly, the reports of psychoanalytic case studies contain ideas assumed for the most part by only the psychoanalytic school.

This procedure does not imply that these two theories are wholly acceptable, and is observed merely as a matter of convenience.

CHAPTER III

Transition?

SZONDI PROFILES

The initial personality pattern was found to be common to cases of Arthritis, Muscle Tension and Pernicious Anaemia.

A. The Basic Pattern

1. The Sexual Vector.

Plus h.-- Subjects indicated a general need for tender affection and caressing, a need still unsatisfied either because of its original extreme strength or because of environmental frustrations. In a childish manner they wished to have contact passively and submissively with the love-object.

Plus s.-- In the area of motor tension the level of their physical activity appeared slightly lower than normal. They accepted consciously the need for uninhibited aggression, but in the face of reality tended to withdraw into themselves rather than fight.

Plus h with plus s.-- Because in other sectors there are repressive tendencies, the sexual tension evident here may be a cause of "drive anxiety" - that state in which they feel anxious at experiencing their own impulses.

2. The Paroxysmal Vector.

Minus e.-- Tension resulting from the need for aggression was not subjected to positive mechanisma of control. Consequently the emotional equilibrium of these individuals was so unstable that outbursts of hostility were likely to occur at intervals as a kind of release.

Minus hy.-- There was either an unwillingness or an inability to reveal the finer emotions that were oriented toward a love-object. Since discharge was denied to it, this need for expression existed commonly under such tension as to create a condition of diffuse anxiety.

Minus e with minus hy.-- Strong affects accumulated in readiness for an aggressive outburst but their discharge was prevented or delayed by a barrier against the display of them. The entire emotional sphere was thus made tense by contradictory methods in its control.

3. The Schizophrenic Vector.

Minus k.-- The subjects did not dare to live out their needs openly, nor were they compelled to face what their needs really were. Repression operated to exclude from their consciousness the impulses originating within themselves that were unacceptable to the Superego.

Minus p.-- The environment was regarded in the light of their own pattern of drives without realizing that this was what occurred. Blame for their own frustrations tended to be attributed to other persons and objects.

Minus k with minus p.-- A realistic attitude was adopted toward the world. They had learned that the environment was stronger than they and that the path of least resistance was conformity with whatever the environment should demand.

4. The Contact Vector.

Plus d.-- They had a need for concrete objects for the sake of owning and controlling them. There was persistance in acquiring them, a tendency for rivalry and depression in that the loss of their possessions was a constant potential danger.

Plus m.-- In a basically dependent attitude they derived pleasure from their love-objects and clung to them for emotional support. They were optimistic because they felt that this gratification could be successfully secured.

Plus d with plus m.-- They competed in seeking to obtain love-objects both to own them and to enjoy them, since they valued highly both material objects and interpersonal relationships.

B. Arthritis.

The dynamically strongest need is in the h factor. The greatest tension is therefore concerned with the acceptance or non-acceptance of tender love and affection.

There are no open factors. Adequate channels for the discharge of emotions do not exist.

There are no ambivalent factors. Conflicting tendencies are not subjectively experienced to the extent of forming a conscious source of disturbance.

There are five strong unconscious driving forces.

1. The need for tender love.
2. The need to repress violent emotions.
3. The need to repress tender emotions.
4. The need to exclude from consciousness all unacceptable impulses.
5. The need to own and control objects.

Plus h.-- On the average significantly more h cards were chosen than by the controls. This indicates a strong need for tenderness.

Plus s.-- On the average fewer s cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly lower physical activity and less aggressive behaviour than normal.

Minus e.-- On the average more e cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly more tension than normal in the attempt to control aggressive emotions.

Minus hy.-- On the average more hy cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly more anxiety than normal in the inability to express openly tender emotions.

Minus k.-- On the average more k cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater repression of impulses from consciousness than normal.

Minus p.-- On the average more p cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly greater tendency than normal to blame the environment for one's frustration.

Plus d.-- On the average significantly more d cards were chosen than by the controls. This indicates a stronger urge for possessiveness of concrete objects than normal.

Plus m.-- On the average more m cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly greater urge than normal to acquire objects for the pleasure they provide.

C. Muscle Tension.

The dynamically strongest need is in the h factor. The greatest tension is therefore concerned with the acceptance or non-acceptance of tender love and affection.

There are no open factors. Adequate channels for the discharge of emotions do not exist.

There are no ambivalent factors. Conflicting tendencies are not subjectively experienced to the extent of forming a conscious source of disturbance.

There are four strong unconscious driving forces.

1. The need for tender love.
2. The need to exclude from consciousness all unacceptable impulses.
3. The need to own and control objects.
4. The need to obtain emotional support from objects.

Plus h.-- On the average more h cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly stronger need for tenderness than normal.

Plus s.-- On the average fewer s cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly lower physical activity and less aggressive behaviour than normal.

Minus e.-- On the average fewer e cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly more effective method of controlling aggressive emotions than is normal.

Minus hy.-- On the average fewer hy cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly less rigid control of the expression of emotions than is normal, with consequent proneness to hysterical symptoms.

Minus k.-- On the average more k cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater repression of impulses from consciousness than normal.

Minus p.-- On the average more p cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly greater tendency than normal to blame the environment for one's frustration.

Plus d.-- On the average significantly more d cards were chosen than by the controls. This indicates a stronger urge for possessiveness of material objects than normal.

Plus m.-- On the average fewer m cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly smaller capacity than normal to

appreciate objects for the emotional support they provide.

D. Pernicious Anaemia

The dynamically strongest need is in the h factor. The greatest tension is therefore concerned with the acceptance or non-acceptance of tender love and affection.

There are no open factors. Adequate channels for the discharge of emotions do not exist.

There are no ambivalent factors. Conflicting tendencies are not subjectively experienced to the extent of forming a conscious source of disturbance.

There are five strong unconscious driving forces.

1. The need for tender love.
2. The need to repress violent emotions.
3. The need to repress tender emotions.
4. The need to blame the environment for frustration.
5. The need to obtain emotional support from objects.

Plus h.-- On the average significantly more h cards were chosen than by the controls. This indicates a stronger desire than normal for tenderness.

Plus s.-- On the average fewer s cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly lower physical activity and less aggressive behaviour than normal.

Minus e.-- On the average fewer e cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly more rigid method of controlling aggressive emotions than is normal.

Minus hy.-- On the average more hy cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly more anxiety than normal in the inability to express openly tender emotions.

Minus k.-- On the average more k cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater repression of impulses from consciousness than normal.

Minus p.-- On the average significantly more p cards were chosen than by the controls. This indicates a greater tendency than normal to blame the environment for one's frustration and to develop paranoid ideas.

Plus d.-- On the average more d cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly stronger urge for possessiveness of concrete objects than normal.

Plus m.-- On the average more m cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly greater urge than normal to acquire

objects for the pleasure they provide.

E. Summary.

The differences between the clinical groups, and their relative variations from normal, are noted. In each factor the group with the largest average number of choices is placed first, and the groups are arranged in order.

Plus h - P.A., M.T., Arthritis, Controls
Plus s - Controls, Arthritis, P.A., M.T.
Minus e - Arthritis, M.T., Controls, P.A.
Minus hy - P.A., Arthritis, Controls, M.T.
Minus k - M.T., P.A., Arthritis, Controls
Minus p - P.A., M.T., Arthritis, Controls
Plus d - M.T., Arthritis, P.A., Controls
Plus m - Arthritis, P.A., Controls, M.T.

The clinical groups are alike in having the same basic personality pattern, inadequate means of discharging their emotional tensions, unconscious sources of conflict, and in revealing a strong unconscious drive to obtain tender love.

A personality pattern was found to be common to cases of Asthma and Chronic Chest Disease (such as Chronic Bronchitis and Bronchiectasis). The pattern in Pulmonary Tuberculosis differed somewhat and will be presented separately.

A. The Common Pattern.

1. The Sexual Vector.

Plus h.-- Subjects in each group indicated a strong need for tender affection and caressing, a need still unsatisfied either because of its original extreme strength or because of environmental frustrations. In a childish manner they wished to have contact passively and submissively with the love-object.

Plus s.-- In the area of motor tension each group consciously accepted the need for uninhibited aggressive behaviour, but tended to exhibit it to less than the normal degree. With somewhat less active physical activity than normal they fought not too vigorously against reality.

Plus h with plus s.-- Because in other vectors there are repressive tendencies, the sexual tension evident here

may be a cause of "drive anxiety" - that state in which they feel anxious at experiencing their own impulses.

2. The Paroxysmal Vector.

Plus e.-- Strict control was exercised over the discharge of their aggressive feelings. Guilt was apt to develop from hostile urges that never were able to be relieved. The subjects tended therefore to express critical and moralistic opinions concerning objects of the environment as a mechanism for reducing the tension.

Minus hy.-- There was unwillingness or inability to express the finer emotions that were oriented toward a love-object. Since discharge was denied to it, this need for expression existed commonly under such tension as to create a condition of diffuse anxiety.

Plus e with minus hy.-- This is the indication of a very strong Superego, and also great disability in discharging emotions through the motor apparatus. Emotions however are felt strongly. The result is that subjects may show compulsive behaviour or signs of conversion hysteria.

3. The Schizophrenic Vector.

Minus k.-- Since repression operated more rigidly than normal to exclude from consciousness all impulses that were unacceptable to the Superego, these individuals neither

lived out their needs nor realized just what they really were.

Minus p.-- The environment was regarded in the light of their own pattern of drives without realizing that this was what occurred. Blame for their own frustration tended to be attributed to other persons and objects.

Minus k with minus p.-- A realistic attitude was adopted toward the world. While interested primarily in manipulating concrete objects rather than in introspection, the subjects had no insight into the fact that they were continuously projecting their needs through action. Conformity with what the environment demanded was found to be more comfortable than attempts to satisfy individualistic needs.

4. The Contact Vector.

Open d.-- The lack of tension in this area suggests that whether the subject held on to old love-objects or acquired new ones was considered not very important. Substitution could be made rather easily because he was inclined to cathect whatever objects that were readily available. This indifference was reflected in an attitude of apathy that, in the event of a loss of interest in outside objects, could develop into depression.

Plus m.-- In a basically dependent attitude they derived pleasure from their love-object and clung to it for emotional support. They were optimistic because they felt that this gratification could be successfully secured and were usually able to give love and affection in return.

Open d with plus m.-- With characteristic passivity there was no strong attachment to the primary love-object or to any other that might have taken its place during the course of development. To whatever objects were available they were inclined to cling anxiously, but if a change became unavoidable found satisfying new emotional support rather quickly. They had an intense need of dependence.

B. Asthma

The dynamically strongest need is in the h factor. The greatest tension is concerned with the acceptance or non-acceptance of tender love.

There is an open d factor. This indicates a lack of tension in the acquisition of love-objects. Any that are easily available can be utilized to give emotional support.

There are no ambivalent factors. Conflicting tendencies are not subjectively experienced to the extent of forming a conscious source of disturbance.

There are five strong unconscious driving forces.

1. The need for tender love.
2. The need to control violent emotions.
3. The need to exclude from consciousness all unacceptable impulses.
4. The need to blame the environment for frustration.
5. The need to obtain emotional support from objects.

Plus h.-- On the average significantly more h cards were chosen than by the controls. This indicates a stronger desire for tenderness than normal.

Plus s.-- On the average fewer s cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly less vigorous physical activity and aggressive behaviour than normal.

Plus e.-- On the average more e cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater control of hostile emotions than normal.

Minus hy.-- On the average more hy cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly more anxiety than normal in the inability to express openly tender emotions.

Minus k.-- On the average more k cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater repression of impulses from consciousness than normal.

Minus p.-- On the average significantly more p cards were chosen than by the controls. This indicates a tendency greater than normal to blame the environment for one's frustration and to develop paranoid ideas.

Open d.-- On the average fewer d cards were chosen than by the controls, either as plus d or as minus d. Significance was not demonstrated. This suggests a slightly greater indifference than normal toward the type of love-object that is acquired to provide emotional support.

Plus m.-- On the average more m cards were chosen than by the controls, but significance was not demonstrated. This suggests that slightly more than normal they derive pleasure and support from the love-object.

C. Chronic Chest Disease.

The dynamically strongest need is in the h factor. The greatest tension is therefore concerned with the acceptance or non-acceptance of tender love.

There is an open d factor. This indicates a lack

of tension in the acquisition of love-objects. Any that are easily available can be utilized to give emotional support.

There are no ambivalent factors. Conflicting tendencies are not subjectively experienced to the extent of forming a conscious source of disturbance.

There are four strong unconscious driving forces.

1. The need for tender love.
2. The need to control violent emotions.
3. The need to exclude from consciousness all unacceptable impulses.
4. The need to obtain emotional support from objects.

Plus h.-- On the average significantly more h cards were chosen than by the controls. This indicates a stronger desire for tenderness than normal.

Plus s.-- On the average fewer s cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly less vigorous physical activity and aggressive behaviour than normal.

Plus e.-- On the average more e cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater control of hostile emotions than normal.

Minus hy.-- On the average significantly more hy cards were chosen than by the controls. This indicates greater anxiety than normal in the inability to express openly tender emotions.

Minus k.-- On the average more k cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater repression of impulses from consciousness than normal.

Minus p.-- On the average more p cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly greater tendency than normal to blame the environment for frustrations.

Open d.-- On the average fewer d cards were chosen than by the controls, either as plus d or as minus d. Significance was not demonstrated. This suggests a slightly greater indifference than normal toward the type of love-object that is acquired to provide emotional support.

Plus m.-- On the average more m cards were chosen than by the controls, but significance was not demonstrated. This suggests that slightly more than normal they derive pleasure and support from the love-object.

D. Tuberculosis.

1. The Basic Pattern.

a) The Sexual Vector,

Plus h.-- Just as did the subjects of the first and second groups, these individuals indicated their strong need for love and affection. They wished for passive and submissive contact with the love-object.

Plus s.-- The level of their physical activity appeared slighly lower than normal. As did the other two groups they tended to withdraw from conflicts with reality rather than display normal aggressiveness.

Plus h with plus s.-- Other vectors show repressive tendencies. Therefore the sexual tension evident here may be a cause of their "drive anxiety" - the state in which they feel anxious at experiencing their own impulses.

b) The Paroxysmal Vector,

Minus e.-- Tension resulting from not accepting the need for aggression was less well controlled than in the first and second groups.

Minus hy.-- The need to repress the expression of tender emotions was slightly less strong than normal, but

the discharge was insufficient to completely alleviate their state of diffuse anxiety.

Minus e with minus hy.-Strong affects accumulated in readiness for an aggressive outburst, but their only partial discharge left the entire emotional sphere somewhat tense.

c) The Schizophrenic Vector,

Minus k.-- The repression operating to exclude from consciousness impulses unacceptable to the Superego was slightly less strong than normal.

Minus p.-- The tendency was slightly greater than normal to blame the environment for their frustrations.

Minus k with minus p.-- As in the first and second groups these subjects were content to conform to the demands of the environment rather than face their individual needs.

d) The Contact Vector.

Minus d.-- There was a generally passive attachment to one primary love-object and even a shrinking from any motor activity necessary to acquire it. At the same time they might impress others as being aggressive.

Minus m.-- Although basically dependent they denied to themselves their need to lean on others for love and support. In sadness and some coldness they tended to withdraw from interpersonal relations.

Minus d with minus m.-- Fixation on a certain object with negation of the need to cling to this object produced restless tension. The importance of enjoyment was denied. They tended to feel somewhat detached from reality.

2. Details of the Pattern.

The dynamically strongest need is in the h factor. The greatest tension is therefore concerned with the acceptance or non-acceptance of tender love.

There are no open factors. Adequate channels for the discharge of emotions do not exist.

There are no ambivalent factors. Conflicting tendencies are not subjectively experienced to the extent of forming a conscious source of disturbance.

There is one strong unconscious driving force, the need for tender love.

Plus h.-- On the average significantly more h cards were chosen than by the controls. This indicates a stronger desire than normal for tenderness.

Plus s.-- On the average fewer s cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly less physical activity and less aggressiveness than normal.

Minus e.-- On the average more e cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly more tension than normal in the attempt to control aggressive emotions.

Minus hy.-- On the average fewer hy cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly less rigid control of the expression of emotions than is normal, with consequent greater proneness to hysterical symptoms.

Minus k.-- On the average fewer K cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly less repression of impulses from consciousness than normal.

Minus p.-- On the average more p cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly greater tendency than normal to blame the environment for one's frustration.

Minus d.-- On the average more d cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly more passive attitude than normal toward acquiring a love-object, even although the subject really desires to own and control it.

Minus m.-- On the average more m cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly stronger than normal denial of the need to lean on others for support.

E. Summary.

The differences between the clinical groups, and the relative variations from normal, are noted. In each factor the group with the largest average number of choices is placed first, and the groups are arranged in order.

Plus h - Asthma, T.B., Chest, Controls
Plus s - Controls, T.B., Chest, Asthma
Minus e - Chest, Asthma, Controls, T.B.
Minus hy - Chest, Asthma, Controls, T.B.
Minus k - Chest, Asthma, Controls, T.B.
Minus p - Asthma, T.B., Chest, Controls
Minus d - T.B., Controls, Asthma, Chest
Minus m - Asthma, Chest, Controls, T.B.

The clinical groups are alike in having similar but not identical personality patterns, unconscious sources of conflict, and in revealing a strong unconscious drive to obtain tender love.

A personality pattern appeared to be common to cases of Diabetes, Obesity and Hypertension.

A. The Basic Pattern

1. The Sexual Vector.

Plus h.-- Subjects indicated a general need for tender affection and caressing, a need still unsatisfied either because of its original extreme strength or because of environmental frustrations. In a childish manner they wished to have contact passively and submissively with the love-object.

Plus s.-- In the area of motor tension the need for uninhibited aggressiveness was accepted. Subjects of the first two groups in the face of reality tended to withdraw into themselves rather than fight. Subjects of the third group experienced the urge for hostility to a degree slightly more than normal,

Plus h with plus s.-- Because in other vectors there are repressive tendencies, the sexual tension evident here may be a cause of "drive anxiety" - that state in which they feel anxious at experiencing their own impulses.

2. The Paroxysmal Vector.

Minus e.-- Tension resulting from the need for aggression was not subjected to positive mechanisms of control. Consequently the emotional equilibrium of these individuals was so unstable that outbursts of hostility were likely to occur at intervals as a kind of release.

Minus hy.-- Subjects of the first group displayed an unwillingness or inability to express the finer emotions that were oriented toward a love-object. Since discharge was denied to it, this need for expression existed commonly under such tension as to create a condition of diffuse anxiety. Subjects of the second and third groups, being less unable to express these feelings felt less tension .

Minus e with minus hy.-- Strong affects accumulated in readiness for an aggressive outburst but their discharge was prevented or delayed by a barrier against the display of them. The entire emotional sphere was made tense when release was inadequate.

3. The Schizophrenic Vector

Minus k.-- Subjects of the first and third groups especially did not dare to live out their needs openly, nor were they compelled to face what their needs really were.

Repression operated to exclude from their consciousness the impulses originating within themselves that were unacceptable to the Superego. Subjects of the second group appeared to repress these impulses to a degree slightly less than normal.

Minus p.-- The environment was regarded in the light of their own pattern of drives without realizing that this was what occurred. Blame for their own frustrations tended to be attributed to other persons and objects.

Minus k with minus p.-- A realistic attitude was adopted toward the world. They had learned that the environment was stronger than they and that the path of least resistance was conformity with whatever the environment should demand.

4. The Contact Vector

Plus d.-- They had a need for concrete objects for the sake of owning and controlling them. There was persistance in acquiring them, a tendency for rivalry, and depression in that the loss of their possessions was a constant potential danger.

Minus m.-- Although in a basically dependent attitude they denied to themselves the need to lean on others for pleasure and support. In spite of an urge to seek gratification from external objects, with sadness and a

sense of loneliness they tended to withdraw from warm interpersonal relations.

Plus d with minus m.-- Ruthless at times in pursuit of their goal, they aggressively mastered objects of the environment. But no pleasure was derived from the activity. Always they felt a certain pessimism in regard to the world as a potential source of enjoyment.

B. Diabetes.

The dynamically strongest need is in the h factor. The greatest tension is therefore concerned with the acceptance or non-acceptance of tender love and affection.

There are no open factors. Adequate channels for the discharge of emotions do not exist.

There are no ambivalent factors. Conflicting tendencies are not subjectively experienced to the extent of forming a conscious source of disturbance.

There are five strong unconscious driving forces.

1. The need for tender love.
2. The need to exclude from consciousness all unacceptable impulses.
3. The need to own and control objects.
4. The need to deny the necessity for obtaining emotional support from objects.

5. The need to blame the environment for frustration.

Plus h.-- On the average significantly more h cards were chosen than by the controls. This indicates a stronger desire than normal for tenderness.

Plus s.-- On the average fewer s cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly lower physical activity and less aggressive behaviour than normal.

Minus e.-- On the average more e cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly more tension than normal in the attempt to control aggressive emotions.

Minus hy.-- On the average more hy cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly more anxiety than normal in the inability to express openly tender emotions.

Minus k.-- On the average more k cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater repression of impulses from consciousness than normal.

Minus p.-- On the average significantly more p cards were chosen than by the controls. This indicates a greater

tendency than normal to blame the environment for one's frustration and to develop paranoid ideas.

Plus d.-- On the average significantly more d cards were chosen than by the controls. This indicates a stronger urge for possessiveness of concrete objects than normal.

Minus m.-- On the average more m cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly stronger denial of the need to lean on others for support than normal.

C. Obesity.

The dynamically strongest need is in the h factor. The greatest tension is therefore concerned with the acceptance or non-acceptance of tender love and affection.

There are no open factors. Adequate channels for the discharge of emotions do not exist.

There are no ambivalent factors. Conflicting tendencies are not subjectively experienced to the extent of forming a conscious source of disturbance.

There are two strong unconscious driving forces.

1. The need for tender love.
2. The need to exclude from consciousness all unacceptable impulses.

Plus h.-- On the average more h cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly stronger desire for tenderness than normal.

Plus s.-- On the average fewer s cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly lower physical activity and less aggressive behaviour than normal.

Minus e.-- On the average more e cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly more tension than normal in the attempt to control aggressive emotions.

Minus hy.-- On the average fewer hy cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly less rigid control of the expression of emotions than is normal, with consequent proneness to hysterical symptoms.

Minus k.-- On the average fewer k cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly less repression of impulses from consciousness than normal.

Minus p.-- On the average more p cards were chosen

than by the controls, but significance was not demonstrated. This suggests a slightly greater tendency than normal to blame the environment for one's frustration.

Plus d.-- On the average significantly more d cards were chosen than by the controls. This indicates a stronger urge for possessiveness of concrete objects then normal.

Minus m.-- On the average more m cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly stronger denial of the need to lean on others for support than normal.

D. Hypertension.

The dynamically strongest need is in the h factor. The greatest tension is therefore concerned with the acceptance or non-acceptance of tender love and affection.

There are no open factors. Adequate channels for the discharge of emotions do not exist.

There are no ambivalent factors. Conflicting tendencies are not subjectively experienced to the extent of forming a conscious source of disturbance.

There are four strong unconscious driving forces.

1. The need for tender love.
2. The need to express violent emotions.
3. The need to exclude from consciousness all

unacceptable impulses.

4. The need to blame the environment for frustration.

Plus h.-- On the average significantly more h cards were chosen than by the controls. This indicates a stronger desire than normal for tenderness.

Plus s.-- On the average more s cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater physical activity and more aggressive behaviour than normal.

Minus e.-- On the average more e cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly more tension than normal in the attempt to control aggressive emotions.

Minus hy.-- On the average fewer hy cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly less rigid control of the expression of emotions than is normal, with consequent proneness to hysterical symptoms.

Minus k.-- On the average more k cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater repression of impulses from consciousness than normal.

Minus p.-- On the average significantly more p cards were chosen than by the controls. This indicates a greater tendency than normal to blame the environment for one's frustration and to develop paranoid ideas.

Plus d.-- On the average significantly more d cards were chosen than by the controls. This indicates a stronger urge for possessiveness of concrete objects than normal.

Minus m.-- On the average more m cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly stronger denial of the need to lean on others for support than normal.

E. Summary.

The differences between the clinical groups, and the relative variation from normal, are noted. In each factor the group with the largest average number of choices is placed first, and the groups are arranged in order.

Plus h - Hypertension, Diabetes, Obesity, Controls
Plus s - Hypertension, Controls, Obesity, Diabetes
Minus e - Obesity, Diabetes, Hypertension, Controls
Minus hy - Diabetes, Controls, Hypertension, Obesity
Minus k - Hypertension, Diabetes, Obesity, Controls

Minus p - Hypertension, Diabetes, Obesity, Controls

Plus d - Obesity, Diabetes, Hypertension, Controls

Minus m - Hypertension, Diabetes, Obesity, Controls

The clinical groups are alike in having the same basic personality pattern, inadequate means of discharging their emotional tensions, unconscious sources of conflict, and in revealing a strong unconscious drive to obtain tender love.

The same personality pattern was found in cases of Rheumatic Heart Disease and Thyrotoxicosis.

A. The Basic Pattern.

1. The Sexual Vector.

Plus h.-- Subjects indicated a general need for tender affection and caressing, a need still unsatisfied either because of its original extreme strength or because of environmental frustrations. They wished passively and submissively to have contact with the love-object.

Plus s.-- In the area of motor tension the levels of their physical activity differed. The first group was slightly more aggressive, accepting more fully the need to display uninhibited hostility in the face of conflict.

Plus h with plus s.-- Because in other vectors there are indications of repression, sexual tension evident here may be a cause of "drive anxiety" - that state in which they feel anxious at experiencing their own impulses.

2. The Paroxysmal Vector.

Plus e.-- Strict control was exercised over the discharge of their aggressive feelings. Guilt was apt to

develop from hostile urges that never were able to be relieved. The subjects tended therefore to express critical and moralistic opinions concerning objects of the environment as a method of reducing the tension.

Minus hy.-- There was unwillingness or inability to express the finer emotions that were oriented toward a love-object. Since discharge was denied to it, this need for expression existed commonly under such tension that a condition was created of diffuse anxiety.

Plus e with minus hy.-- This indicates a very strong Superego, and great disability in discharging emotions through the motor apparatus. The emotions however are felt strongly. The subjects may show signs of compulsion or of conversion hysteria.

3. The Schizophrenic Vector.

Minus k.-- Repression operates more rigidly than normal in excluding from consciousness the impulses that are not acceptable to the Superego. Thus these individuals have neither faced the nature of their real needs nor have lived them out completely.

Minus p.-- The environment is regarded in the light of their own pattern of drives without their realizing that this is what occurs. Blame for their own frustration tends

to be attributed to objects of the environment.

Minus k with minus p.-- A somewhat realistic attitude was adopted toward the world. While interested more in manipulating concrete objects than in engaging in introspection the subjects had no insight into the fact that they continuously projected their needs. Conformity with the demands of the environment was found to be less disturbing than any attempt to satisfy individualistic needs.

4. The Contact Vector.

Plus d.-- They had a strong need to acquire concrete objects for the sake of owning and mastering them. They showed persistence in their acquisition, a tendency for rivalry, and depression because the loss of these possessions was a constant potential danger.

Plus m.-- In a dependent manner they clung to their love-objects for emotional support, and derived pleasure from them. They were optimistic in a conviction that this gratification could be successfully obtained, and usually could give love and affection in return.

Plus d with plus m.-- Since they valued highly both the possession of material objects and interpersonal relationships, they eagerly competed in the acquiring of love-objects to master them and to enjoy them.

B. Rheumatic Heart Disease.

The dynamically strongest need is in the h factor. The greatest tension is concerned therefore with the acceptance or non-acceptance of the need for tender love.

There are no open factors. Adequate channels for the discharge of emotions do not exist.

There are no ambivalent factors. Conflicting tendencies are not subjectively experienced to the extent of forming a conscious source of disturbance.

There are five strong unconscious driving forces.

1. The need for tender love.
2. The need to express violent emotions.
3. The need to repress tender emotions.
4. The need to exclude from consciousness all unacceptable impulses.
5. The need to blame the environment for frustrations.

Plus h.-- On the average more h cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly stronger desire for tenderness than normal.

Plus s.-- On the average more s cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater physical activity and aggress-

ion than normal.

Plus e.-- On the average more e cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater control of hostile emotions than normal.

Minus hy -- On the average more hy cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly more anxiety than normal in the inability to express openly tender emotions.

Minus k.-- On the average more k cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly less repression of impulses from consciousness than normal.

Minus p.-- On the average significantly more p cards were chosen than by the controls. This indicates a greater tendency than normal to blame the environment for one's frustration and to develop paranoid ideas.

Plus d.-- On the average significantly more d cards were chosen than by the controls. This indicates a stronger urge for possessing concrete objects than normal.

Plus m.-- On the average more m cards were chosen than by the controls, but significance was not demonstrated.

This suggests that slightly more than normal they derive emotional support and pleasure from the love-object.

C. Thyrotoxicosis.

The dynamically strongest need is in the h factor. The greatest tension is therefore concerned with the acceptance or non-acceptance of tender love and affection.

There are no open factors. Adequate channels for the discharge of emotions do not exist.

There are no ambivalent factors. Conflicting tendencies are not subjectively experienced to the extent of forming a conscious source of disturbance.

There are five strong unconscious driving forces.

1. The need for tender love.
2. The need to control violent emotions.
3. The need to repress tender emotions.
4. The need to exclude from consciousness all unacceptable impulses.
5. The need to obtain emotional support from objects.

Plus h.-- On the average more h cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly stronger desire than normal for tenderness.

Plus s.-- On the average fewer s cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly less physical activity and less aggressive behaviour than normal.

Plus e.-- On the average significantly more e cards were chosen than by the controls. This indicates more rigid control of hostile emotions than normal.

Minus hy.-- On the average significantly more hy cards were chosen than by the controls. This indicates greater anxiety than normal in the inability to express openly tender emotions.

Minus k.-- On the average more k cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater repression of impulses from consciousness than normal.

Minus p.-- On the average more p cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly greater tendency to blame the environment for one's frustration.

Plus d.-- On the average significantly more d cards were chosen than by the controls. This indicates a stronger urge for possessing concrete objects than normal.

Plus m.-- On the average more m cards were chosen than by the controls, but significance was not demonstrated. This suggests that slightly more than normal they derive emotional support from the love-object.

D. Summary.

The differences between the clinical groups, and the relative variation from normal, are noted. In each factor the group with the larger average number of choices is placed first, and the grouped are arranged in order.

Plus h - R.H.D., Thyrotoxicosis, Controls
Plus s - R.H.D., Controls, Thyrotoxicosis
Plus e - Thyrotoxicosis, R.H.D., Controls
Minus hy - Thyrotoxicosis, R.H.D., Controls
Minus k - R.H.D., Thyrotoxicosis, Controls
Minus p - R.H.D., Thyrotoxicosis, Controls
Plus d - R.H.D., Thyrotoxicosis, Controls
Plus m - Thyrotoxicosis, R.H.D., Controls

The clinical groups are alike in having the same basic personality pattern, inadequate means of discharging their emotional tensions, unconscious sources of conflict, and in revealing a strong unconscious drive to obtain tender love.

There appeared to be a personality pattern common to cases of Peptic Ulcer, Dyspepsia and Alcoholism.

A. The Basic Pattern.

1. The Sexual Vector.

Plus h.-- Subjects indicated a general need for tender affection and caressing, a need still unsatisfied either because of its original extreme strength or because of environmental frustrations. In a childish manner they wished to have contact passively and submissively with the love-object.

Plus s.-- In the area of motor tension the level of their physical activity appeared slightly higher than normal. They accepted consciously the need for aggressiveness and in the face of reality tended to display uninhibited hostility.

Plus h with plus s.-- Because in other vectors there are repressive tendencies, the sexual tension evident here may be a cause of "drive anxiety" - that state in which they feel anxious at experiencing their own impulses.

2. The Paroxysmal Vector.

Minus e.-- In the first and second groups tension existed because the need for aggression was not subjected to positive mechanisms of control. Their emotional equilibrium was so unstable that outbursts of hostility were likely to occur at intervals as a kind of release. In the third group there was evidence that discharge of the strong affects was more successfully inhibited.

Minus hy.-- There was either unwillingness or inability to reveal the finer emotions that were oriented toward a love-object. Since discharge was denied to it, this need for expression existed commonly under such tension as to create a condition of diffuse anxiety.

Minus e with minus hy.-- Strong affects accumulated in readiness for an aggressive outburst but their discharge was prevented or delayed by a barrier against the display of them. The entire emotional sphere was thus made tense by contradictory methods in its control.

3. The Schizophrenic Vector.

Minus k.-- The subjects did not dare to live out their needs openly, nor were they compelled to face what their needs really were. Repression, more rigid than normal in the second and third groups, and slightly less so in the first group, operated to exclude from consciousness

impulses originating within themselves that were unacceptable to the Superego.

Minus p.-- The environment was regarded in the light of their own pattern of drives without realizing that this was what occurred. Blame for their own frustrations tended to be attributed to other persons and objects.

Minus k with minus p.-- A realistic attitude was adopted toward the world. They had learned that the environment was stronger than they and that the path of least resistance was conformity with whatever the environment should demand.

4. The Contact Vector.

Minus d.-- There was a generally passive attachment to one primary love-object and a shrinking from any motor activity that was necessary to accomplish it. Paradoxically they impressed others as being aggressive. A certain idealism assured ethical behaviour.

Plus m.-- In a basically dependent attitude they derived pleasure from their love-object and clung to it for emotional support. They were optimistic because they felt that this gratification could be successfully secured and were usually able to give love and affection in return.

Minus d with plus m.-- Both factors express the need to cling to a love-object that is in most cases a person or an idea. The need for support is accepted. Because of the passivity inherent in these subjects they may experience difficulties in attaining outward success.

B. Peptic Ulcer,

The dynamically strongest needs are in the h and s factors. The greatest tension is concerned with the acceptance or non-acceptance of tender love, and with the expression or repression of aggression.

There are no open factors. Adequate channels for the discharge of emotions do not exist.

There are no ambivalent factors. Conflicting tendencies are not subjectively experienced to the extent of forming a conscious source of disturbance.

There are five strong unconscious driving forces.

1. The need for tender love.
2. The need to express violent emotions.
3. The need to repress violent emotions.
4. The need to repress tender emotions.
5. The need to exclude from consciousness all unacceptable impulses.

Plus h.-- On the average significantly more h cards were chosen than by the controls. This indicates a stronger desire for tenderness than normal.

Plus s.-- On the average more s cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater physical activity and display of aggression than normal.

Minus e.-- On the average more e cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly less effective method of controlling aggressive emotions than normal.

Minus hy.-- On the average more hy cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly more anxiety than normal in the inability to express openly tender emotions.

Minus k.-- On the average fewer k cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly less repression of impulses from consciousness than normal.

Minus p.-- On the average more p cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly greater tendency than normal to blame the environment for one's frustration.

Minus d.-- On the average fewer d cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly more motor activity than normal in effecting an attachment, although it is a generally passive one, to the primary love-object.

Plus m.-- On the average more m cards were chosen than by the controls, but significance was not demonstrated. This suggests that slightly more than normal they derive emotional support and pleasure from the love-object.

C. Dyspepsia

The dynamically strongest need is in the h factor. The greatest tension is therefore concerned with the acceptance or non-acceptance of tender love and affection.

There are no open factors. Adequate channels for the discharge of emotions do not exist.

There are no ambivalent factors. Conflicting tendencies are not subjectively experienced to the extent of forming a conscious source of disturbance.

There are five strong unconscious driving forces.

1. The need for tender love.
2. The need to express violent emotions.
3. The need to repress tender emotions.
4. The need to exclude from consciousness all

unacceptable impulses.

5. The need to obtain emotional support from objects.

Plus h.-- On the average more h cards were chosen than by the controls, but significance was not demonstrated. This suggests that the desire for tenderness is slightly greater than normal.

Plus s.-- On the average more s cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater physical activity and more aggressive behaviour than normal.

Minus e.-- On the average more e cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater tension than normal in the attempts to control the expression of hostile emotions.

Minus hy.-- On the average more hy cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater anxiety than normal in the inability to express openly tender emotions.

Minus k.-- On the average more k cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater repression of impulses from consciousness than normal.

Minus p.-- On the average more p cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly greater tendency than normal to blame the environment for one's frustration.

Minus d.-- On the average more d cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly more passive attitude than normal toward acquiring a love-object, even though the latter is to be used to provide emotional support.

Plus m.-- On the average more m cards were chosen than by the controls, but significance was not demonstrated. This suggests that to a slightly greater degree than normal they obtain a love-object for the purpose of deriving pleasure from it.

D. Alcoholism.

The dynamically strongest need is in the s factor. The greatest tension is therefore concerned with the expression or restraint of uninhibited aggression.

There are no open factors. Adequate channels for the discharge of emotions do not exist.

There are no ambivalent factors. Conflicting tendencies are not subjectively experienced to the extent of forming a conscious source of disturbance.

There are seven strong unconscious driving forces.

1. The need for tender love.
2. The need to express violent emotions.
3. The need to repress tender emotions.
4. The need to exclude from consciousness all unacceptable impulses.
5. The need to blame the environment for frustration.
6. The need to own and control objects.
7. The need to obtain emotional support from objects.

Plus h. -- On the average more h cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly stronger desire than normal for tenderness.

Plus s.-- On the average significantly more s cards were chosen than by the controls. This indicates a greater degree of physical activity and aggressive behaviour than normal.

Minus e.-- On the average fewer e cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly more rigid repression of hostile outbursts than normal, and conflicts with the tendency in the s factor. The control of hostile feelings is however aided by releasing them gradually through frequent active aggressive acts.

Minus hy.-- On the average more hy cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly more anxiety than normal in an inability to express openly tender emotions.

Minus k.-- On the average more k cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater repression of impulses from consciousness than normal.

Minus p.-- On the average more p cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly greater tendency than normal to blame the environment for one's frustration.

Minus d.-- On the average more d cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly less motor activity than normal in effecting an attachment to a primary love-object. The relationship once acquired remains an essentially passive one.

Plus m.-- On the average more m cards were chosen than by the controls, but significance was not demonstrated. This suggests that slightly more than normal they derive emotional support and pleasure from the love-object.

E. Summary.

The differences between the clinical group, and the relative variation from normal, are noted. In each

factor the group with the largest average number of choices is placed first, and the groups are arranged in order.

Plus h - Ulcer, Dyspepsia, Alcoholism, Controls
Plus s - Alcoholism, Ulcer, Dyspepsia, Controls
Minus e - Ulcer, Dyspepsia, Controls, Alcoholism
Minus hy - Ulcer, Alcoholism, Dyspepsia, Controls
Minus k - Dyspepsia, Alcoholism, Controls, Ulcer
Minus p - Ulcer, Alcoholism, Dyspepsia, Controls
Minus d - Alcoholism, Dyspepsia, Controls, Ulcer
Plus m - Alcoholism, Dyspepsia, Ulcer, Controls

The clinical groups are alike in having the same basic personality pattern, inadequate means of discharging their emotional tensions, unconscious sources of conflict, and in revealing a strong unconscious drive to obtain tender love.

F. Observations.

The 14 clinical groups appear to be represented by 5 personality patterns.

1. Arthritis, Muscle Tension, Pernicious Anaemia.
2. Asthma, Chronic Chest, Tuberculosis.
3. Diabetes, Obesity, Hypertension.
4. Rheumatic Heart Disease, Thyrotoxicosis.
5. Peptic Ulcer, Dyspepsia, Alcoholism.

The groups differ in some respects, but they are alike in possessing inadequate means of discharging their emotional tensions, unconscious sources of conflict, and in revealing a strong unconscious drive to obtain tender love.

These conclusions will be validated by comparison with Rorschach profiles and with clinical impressions before they are accepted and discussed.

CHAPTER IV

RORSCHACH PROFILES

The results of the Szondi tests were further considered in comparison with the results of the Rorschach administered to patients suffering from the same chronic illnesses. These vary in the amount of detail that appears in the literature.

Alcoholism.

One group of subjects consisted of 20 males and 6 females, aged 24-55 years, who had been drinking heavily for 5-30 years.[1] Their responses, showing preoccupation with oral symbolism, contained the words liquid containers, bottles, cups and goblets. Their need for active oral gratification appeared in the verbs drink, suck, and eat. Oral dependency needs were indicated in the choice of the words food, breasts, alcohol, mouth, lips and teeth. There was concern regarding bodily functions in the long series of anatomical entities - tonsils, throat, skeleton, backbone, pelvis, viscera, lungs, stomach, kidneys and reproductive organs. This is summarized into the statements that oral

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1. Reitzell, Jeanne Mannheim, A Comparative Study of Hysterics, Homosexuals and Alcoholics Using Content Analysis of Rorschach Responses in Journal of Projective Techniques, Vol. 13, No. 2, 1949, p. 127-141.

dependency is emphasized, with compulsive needs for satisfaction. There is preoccupation with the means for satisfaction, and the bodily functions concerned with digestive processes.

Arthritis.

Booth used several groups of subjects. As his conclusion he states that arthritics are dominated by an urge for individual independent action.[2] Obstacles are liable to provoke aggression. Adjustment to their work is hampered by preoccupation with personality problems.[3] They strain themselves unduly against the normal proportioning of energy, using motor restlessness as a substitute for useful actions. They are self-centred and hypersensitive. There is a fear of giving in to their feelings and an anxious desire to hide them in the presence of others. Inner defensive attitudes against others are masked. Colour responses are lacking or are inferior in number to movement responses.[4] Often there is typical colour shock indicating a defensive

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2. Booth, Gotthard Cohen, Use of the Rorschach Method with Cases of Chronic Arthritis, Parkinsonism and Arterial Hypertension in Psychosomatic Medicine, Vol. 8, No. 6, issue of November 1946, p. 367-385.

3. Booth, Gotthard Cohen, Personality and Chronic Arthritis in Journal of Nervous and Mental Disease, Vol. 85, No. 6, issue of June 1937, p. 637-661.

4. Booth, Gotthard Cohen, Objective Technics in Personality Testing in Archives of Neurology and Psychiatry, Vol. 42, No. 3, issue of September 1939, p. 511-530.

attitude toward emotional involvement and outside influences. Their fear and anxiety are shown in their preference for responses prompted by detail.

Asthma.

From analysis of the records of 40 patients Schatia wrote that they tend to have compulsive personalities without evidence of phobia or compulsion.[5] They react to environmental and personal problems in a detached manner, frequently jumping to conclusions or interpretations from evidence on its face value. They are rigid in their reactions, covering emotional turmoil with intellectualization.

Wallisch administered the test to a female child of 11 years.[6] It showed that she had an imagination so overdeveloped that it hindered her intellectual progress and lowered the grade of maturity otherwise possibly achieved. She had an intense inner tension with signs of deep conflict, yet was strongly moved by external stimuli. Badly controlled impulses stirred up forceful phantasies. Her over-imagination made her very suggestible and subdued by the influence of another person. Egocentricity and sadistic tenden-

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5. Schatia, Viva, The Incidence of Neurosis in Cases of Bronchial Asthma in Psychosomatic Medicine, Vol. 3, No. 2, issue of April 1941, p. 157-169.

6. Wallisch, E., The Rorschach Method as an Aid to the Psychotherapy of an Asthmatic Child in British Journal of Medical Psychology, Vol. 22, Parts 1 and 2, 1949, p. 72-87.

cies caused her to be aggressive and domineering. The outer control of her emotional life was insufficient, and her phantasies often were of a threatening nature. She was the victim of insecurity, anxiety and marked obsessive-compulsive traits.

Diabetes.

The few Rorschach tests of these patients support the impression that hysterical traits and often psychotic tendencies are prominent.[7]

Hypertension.

Booth reports that patients tend toward dependent relationships in the form of identification with their social environment.[8] This action is determined by material needs and social standards. Obstacles easily provoke conflicts between dependent and aggressive impulses, resulting in restriction of the range of action and of perception.

Kemple in comparing hypertensive patients with those suffering rheumatic disease reports that the former are

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7. Dunbar, Flanders, Psychosomatic Diagnosis, New-York, Paul B. Hoeber, 1943, p. 540.

8. Booth, Gotthard Cohen, Use of the Rorschach Method with Cases of Chronic Arthritis, Parkinsonism and Arterial Hypertension in Psychosomatic Medicine, Vol. 8, No. 6, issue of November 1946, p. 367-385.

more ambitious for power; they have more conscious hostility and they experience a more constant acute conflict between aggression and their dominant passive dependency needs.[9] There is a stronger introversive tendency, with a greater emphasis on inner values of creative thought and imagination. They are less responsive to the outer world, less emotionally dependent on it, less labile and less suggestible. There is greater self-confidence in dealing with outer reality, although they are fearful of expressing strong feelings. Drive to dominate appears to compensate for inner security doubts and fear of possible weakness. Evidence of hostility is strong and more freedom in expressing it. Masochism is conspicuous but less persistant.

Obesity.

The record of a female aged 32 years showed Zueker[10] an extremely constricted personality, with an inhibited reflective inner life and repression of the outward expression of feeling. Anxiety frequently bordering on panic produced confused thinking and some loss of reality contact. The phantasy life was too limited to offer refuge from her

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9. Kemple, Camilla, Rorschach Method and Psychosomatic Diagnosis in Psychosomatic Medicine, Vol. 7, No. 2, issue of March 1945, p. 85-89.

10. Zueker, Luise, A Case of Obesity: Projective Techniques Before and During Treatment in Journal of Projective Techniques, Vol. 12, No. 4, 1948, p. 202-215.

fears. Depression was present. She was apathetic, passive, resigned. Her hysterical outbursts were ineffective and harmful only to herself. An overt response to environmental stimuli was at the expense of a more self-understanding attitude. She was extraverted from inner emptiness and lack of depth. With flatness of emotion she could not relate to people and remained isolated. Her outward gestures of superficially sociable behaviour were a surface reaction that barely concealed resentment and hostility. She was antagonistic toward men and contemptuous of women. Feelings of rejection were in the foreground making social relationships poor; in them she betrayed her egocentricity and immaturity.

Rheumatic Heart Disease.

Kemple interpreted the record of a 24 year old male who had suffered heart disease since he had scarlet fever at 10 years.[11] Mentally he was apathetic with self-defeatism apparent in his general relation toward achievement. His interests were limited. With an undeveloped reflective imaginative life he made sporadic diffuse hysterical responses to the outer world.He was highly suggestible and his defences against influence were lacking except for compulsive trends

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11. Kemple, Camilla, A Comparative Study of Three Projective Methods: A Case of Rheumatic Heart Disease in Journal of Projective Techniques, Vol. 11, No. 1, 1947, p. 26-40.

and negativism. He had no conscious awareness of himself in relation to other people, and identification with either parent was poor. Specific anxiety existed over feelings of sexual inadequacy. He was passive, weak and infantile, typical of patients suffering this disease.

Peptic Ulcer.

Kaldegg and O'neill report that the most conspicuous abnormal features in patients with duodenal ulcers are anxiety, emotional lability and immaturity.[12] Of a group of 20, 9 gave less than 30% of the responses to the last three cards, indicating morbid limitation of emotional reaction. In 12 the per cent of responses with animal form or movement was more than 40%, which may be regarded as a sign of immaturity or narrowing of the range of mental activity. The low number of responses in which human figures were seen is a sign of failure to achieve satisfactory relationships with other people.

Brown considered the records of 25 patients.[13] In comparison with a control group oral preoccupations occurred somewhat more frequently, as did aggressive urges. There

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12. Kaldegg, Ann, and Desmond O'Neill, Rorschach Pattern in Duodenal Ulcer in Journal of Mental Science, Vol. 96, No. 402, issue of January 1950, p. 190-98.

13. Brown, Malcolm, and others, Personality Factors in Duodenal Ulcer in Psychosomatic Medicine, Vol. 12, No. 1, issue of January 1950, p. 1-5.

is a marked predominance of instinctual over creative drives, the patients tending to deal with the environment on the impulsive, emotionally immature level. This led to conflict in the area of social inter-personal relationships.

Tuberculosis.

In 1949 a controlled study was done on tuberculous patients with the use of the Bernreuter Personality Inventory.[1] One hundred were matched for age, sex, educational level and socio-economic status with 100 non-tuberculous from the general population. In a highly significant degree the tuberculous were more unstable emotionally, imaginative and introverted, ready to ask for encouragement and advice, and submissive; to a significant degree they were more self-conscious and dependent.

Summary.

In the main, the profiles of Rorschach tests and the conclusions from the Bernreuter Personality Inventory support the inferences drawn from the Szondi profiles of patients suffering the same diseases. There is the same

1. Kay, Brian Ross Ronald, An Investigation Into the Adjustment of Hospitalized Tuberculous Patients, M.A. thesis, University of British Columbia, Department of Philosophy and Psychology, April 1949, 49 p. Unpublished.

emphasis on the inadequate way of meeting life's problems, the same helpless dependency expressed as hostility in the face of failure, the same hypersensitivity and inability to make satisfying social contact.

This tends to confirm the validity of the Szondi test, but will be supported by the observations of interns who may consider that the information they have slowly acquired over the years is more dependable than the results of a brief projective procedure.

CHAPTER V

CLINICAL IMPRESSIONS

As a means of checking the validity of the results comparison was made with clinical impressions that have been reported.

A. Arthritis.

In a group of 43 cases studied by Booth, 12 admitted hostility or indifference toward members of their own family, 11 prided thamselves on their strong willpower and happiness without sex, 14 were ambitious in seeking to better the conditions into which they had been born and were social climbers, 7 valued very highly freedom from outside interference in their lives, and 13 were easily hurt by imputations concerning their honour.[1]

While eager to conform to convention and to fulfil moral obligations they appeared maladjusted as a defence against the possible interference of the environment. To ensure their independence they sought distinction in business and education, but as adults had no competitive interest in athletics. There was no urge to contribute anything to the public welfare; they wished merely not to

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[1] Booth, Gotthard Cohen, Personality and Chronic Arthritis in Journal of Nervous and Mental Disease, Vol. 85, No. 6, issue of June 1937, p. 637-661.

be inferior to others. Ambitious efforts brought them conscious dissatisfaction however. With motor restlessness instead of useful activity they strained themselves in their expenditure of energy, seeming deliberately to overtax their strength. The help that other persons secured from friends they compelled themselves to supply by their own efforts. Because of a hypersensitivity their feelings were easily ruffled and there was a lack of wholehearted interest in their work.

Halliday observed two types of facies - the worried hunted expression was quite distinct from the placid complacent one that was pathologically free from anxiety.[2] They were of all ages and equally divided between the sexes but the majority were widows, widowers, married people who lived apart, people who lived alone or felt that they lived alone. Among the males were especially miners, workers at heights, travelling salesmen on commission and clergymen. Among the females were typists, teachers, cleaners and piece workers. In both sexes there were many in sheltered clerical occupations where the creative desire was continuously thwarted. Eight of 14 females were disinterested in sex: 3 of 6 males acknowledged dependence on their mothers and sisters. With a heavily developed sense of

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2. Halliday, J.L., The Psychological Approach to Rheumatism in Proceedings of the Royal Society of Medicine, Vol. 31, issue of November 19, 1938, p. 167-178.

duty they were overconscientious, punctual and veritable slaves to routine.[3] With relative poverty of facial expression they habitually concealed the activity of their inner emotional life.

> In addition to the tendency to control their feelings, these patients tend also to control their human environment, their husbands and children. They are generally demanding and exacting toward their children and at the same time worry about them and do a great deal for them. It is, however, a domineering type of solicitude, a mixture of the tendency to dominate with the masochistic need to serve other people. This masochism at first glance seems to be in contradiction to the aggressive domination, but while they serve their environment and sacrifice themselves for members of the family, they are also dominating and controlling them.[4]

Previous to the onset of their illness about two thirds of them were schizoid and morbidly anxious.[5] Afterwards they developed a cheerier attitude and their manner was one of touching patience. They displayed even a quiet friendliness. Notwithstanding, after the consideration of 450 cases, Boland concluded that one third were significantly incapacitated because of psychic difficulties.[6]

As children they had been shy and retiring, mark-

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3. Halliday, J.L., Concept of a Psychosomatic Affection in Lancet, Vol. 245, No. 2, issue of December 4, 1943, p. 692-696.

4. Alexander, Franz, Psychosomatic Medicine, New York, W.W. Norton, 1950, p.202.

5. Halliday, J.L., The Psychological Approach to Rheumatism, p. 167-178.

6. Ellman, Philip and others, A Biographical Study of 50 Civilian and Military Cases from the Rheumatic Unit in Annals of Rheumatic Disease, Vol. 3, No. 1, issue of March 1942, p. 56-76.

edly orderly and overly clean.[7] The girls had showed an unusually great fondness for outdoor pursuits and competitive sports.[8] As they grew older they still tended to reject the feminine role.

> They assume certain masculine attitudes; they compete with men and cannot submit to them. It is interesting that most of these women patients select compliant and passive men as their mates.[9]

This tendency to control the environment on the part of the men as well as the women was reflected in the Szondi by a significantly large choice of Plus d cards. It also indicated their persistency in striving to reach their goal, determination to the point of obstinacy. There was a measure of success, there was orderliness in the manner of their exercise of mastery, but always there was an accompanying mild depression. The weaker Plus m suggested not too great a capacity for sublimation or for giving affection to others. In the Plus d with plus m there was evidence of their restlessness and difficulties in concen-

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7. Halliday, J.L., Psychosomatic Medicine and the Rheumatism Problem in The Practitioner, Vol. 152, No. 907, issue of January 1944, p. 6-15.

8. Gildea, Edwin F., Special Features of Personality Which are Common to Certain Psychosomatic Disorders in Psychosomatic Medicine, Vol. 11, No. 5, issue of September 1949, p. 273-281.

9. Alexander, Franz in Psychosomatic Medicine, p. 202.

tration.

Plus h with plus s is charactistic of persons who are interested in the realistic and materialistic aspects of life. The strong Plus h revealed that cravings to be loved as a dependent child were being frustrated. The weak Plus s implied lower vitality than normal with some inhibition of hostile feelings. In women it was a sign of masculine identification that had either to be sublimated or be a source of tension.

Very appropriately in the Minus e there was evidence of tension in the attempts to control the expression of the aggression which they would not consciously accept. By the Minus hy they showed emotional shyness - and the fact that not even tender emotions could be easily expressed gave to their affects additional dynamic importance in the total structure of their personality. The emotional control was the sign of a strong Superego that has overcome the childish need for exhibitionism, but in the light of Minus k there was suggested a degree of repression that could lead to neurotic symptoms.

Minus k with minus p shows the efforts to keep the person calm and detached from the environment. There is an optimum willingness to accept standards with little questioning of their origin and validity. As they sadly attempt to live in conformity and independence they continue to blame the environment for all their frustrations.

B. Pernicious Anaemia

The few reports that have appeared in the literature agree in attributing to the patient suffering from this disease a general peevishness and suspiciousness. Barrett in 1913 referred to the characteristic irritability that coloured their behaviour.[10] Later, Goldhamer in a careful assessment of their personality reported irritability in 64%, memory disturbance in 60%, mild depression in 58%, hallucinations in 16%, apathy in 6% and maniacal outbursts in 2%.[11]

The deviations from normal appear to progress by three stages. At first there is jealousy, quarrelsomeness, peevishness and decreased energy.[12] These may increase to such a degree that paranoid ideas develop. There may be delusions of persecution, abusive outbursts, restlessness and extreme agitation. In the terminal stage the patient suffers mental confusion and terrifying hallucinations.

Because of the effectiveness of modern therapy

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10. Barrett, Albert Moore, Mental Disorders Associated with Pernicious Anaemia in American Journal of Insanity, Vol. 69, No. 5, Special Number, 1913, p. 1063-78.

11. Goldhamer, S.M., The Occurrence and Treatment of Neurologic Changes in Pernicious Anaemia in Journal of the American Medical Association, Vol. 103, issue of December 1, 1934, p. 1663-67.

12. van Baalen, J., Mental Changes in Pernicious Anaemia in Archives of Neurology and Psychiatry, Vol. 42, No. 5, issue of November 1939, p. 932.

few cases today progress beyond the first stage. Woltman however describes their typical indifference to the disease, their apathy and irritable depression. These characteristics make them a distinctive group.[13]

In the records of the Szondi test a consistently weak Plus s suggested less vigorous activity than is the average, with failure to openly show their aggressive feelings. Instead, as seen in the Minus e, they were apt to discharge these only at intervals in rather uncontrolled explosions. During the rest of the time they endured a state of general tension which might be reflected in their habitual peevishness. There was basic dependency with a disinclination to exert themselves, in the strong Plus h. Depression was indicated by the Plus d. Repression of the expression of their tender feelings kept them from knowing relief from tension, and there was no insight into the nature of their individual needs.

In general their personality resembled that of the Arthritics, except that they were more susceptible to the development of paranoid ideas.

Thus it is shown that the results of the Szondi test and clinical observation ascribe essentially the same personality to these patients of the two groups.

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13. Woltman, Henry W., The Mental Changes Associated with Pernicious Anaemia in American Journal of Psychiatry, Vol. 80, No. 1, issue of January 1924, p. 435-449.

Asthma

The personality pattern characteristic of Asthmatic patients according to the Szondi test was compared with the observations of internists.

The latter frequently reported an abnormal relationship between the patients and their parents. Their fathers were relatively passive individuals.[1] The mothers were dominating, critical of their husbands and often earning more than their husbands. Ambitious for themselves and their children, they brought up their family conscientiously but with little affection, and the children were disturbed.

Strauss concluded that asthmatic children were divided into two groups.[2] The first was of children who had been very much wanted, such as an only child or the first boy in a family of girls: the other was of definitely unwanted children whose parents were overcompensating for their unconscious hostility toward them.

The prevalence of rejection was investigated by Miller who interviewed the mother, and often the father, of 63 Asthmatic patients and of 37 controls. Maternal reject-

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1. Bakwin, Ruth Morris, The Child with Asthma in Journal of Pediatrics, Vol. 32, No. 3, issue of March 1948; p. 320-323.

2. Strauss, E.B., The Psychogenic Factors in Asthma in Guy's Hospital Report, Vol. 85, No. 3, issue of July 1935, p. 309-316.

ion was admitted in 62 cases among the Asthmatics and in 9 cases among the controls.[3] Many mothers tried to excuse themselves for not wanting the child or blamed its sex. Some quite realized that they had showered attention on their child to hide from themselves their rejection of it.

This almost unanimous expression of maternal feeling correlated with sex maladjustment between the parents. It has been stated that asthma develops in people who are second, third or fourth generation descendants of intensely nervous persons.[4] They themselves have a deep seated sense of insecurity.

Rogerson, Hardcastle and Duguid, in a report on 23 patients, wrote that

> . . . no less than seventeen of the children were fussed over and overprotected by their parents to a pathological degree. This was not just a slight abnormality of parental attitude, it was pathological to a degree which made one feel that if these children had not been brought to the hospital with asthma or prurigo they might easily have been referred on account of the nervousness engendered in them by this situation.[5]

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3. Miller, Hyman and Dorothy W. Baruch, Psychosomatic Studies of Children with Allergic Manifestations in Psychosomatic Medicine, Vol. 10, No. 5, issue of September 1948, p.275-278.

4. Stokes, John H., The Personality Factor in Psychoneurogenous Reactions of the Skin in Archives of Dermatology and Syphilology, Vol. 42, No. 5, issue of November 1940, p. 780-801.

5. Rogerson, C.H., D.H. Hardcastle and K. Duguid, A Psychological Application to the Problem of the Asthma-Eczema-Prurigo Syndrome in Guy's Hospital Report, Vol. 85, No. 3, issue of July 1935, p. 289-308.

This nervousness is understandable. As Alexander puts it

> The child who is still in need of maternal care naturally responds to maternal rejection with increased feelings of insecurity and increased clinging to the mother. In other cases, mothers of asthmatic children have been found to be insistent upon making their children prematurely independent. By pushing the child toward an as yet unacceptable independence, they achieve just the opposite; the result is an increased insecurity in the child with dependent clinging.[6]

Whether or not one concedes with Swanton that a constitutional predisposition exists, it is obvious to clinicians that the young asthmatic is nervous, irritable, excitable, aggressive, domineering, overanxious, frightened and lacking in confidence.[7]

As a result of his insecurity he often appears at first sight repressed and submissive.[8] Generally he has an air of subdued tension about him. If given opportunities for freer self-expression he becomes domineering and aggressive. To fulfil his own personality needs he demands protection from his parents, but in the fulfilment of his

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6. Alexander, Franz, Psychosomatic Medicine, New York, W.W. Norton, 1950, p. 135.

7. Swanton, Cedric, Asthma and Other Psychophysical Interrelations in Medical Journal of Australia, Vol. 1, No. 5, issue of February 1947, p. 138-145.

8. Rogerson, C.H., Psychological Factors in Asthma in British Medical Journal, Vol. 1, issue of April 3, 1943, p. 406-407.

desires he loses his freedom and is thereby made tense and irritable. In a group of 30, 19 dominated their families, claiming their attention to avoid the fear of being left alone.[9] Twenty-one of them showed over-anxiety even in their school work.

Dunbar records that hostility in these patients seems constantly on the point of being carried into action.[10] Hence they are in constant terror. There seemed little intervening between phantasy and actually doing what is phantasied, and they are perpetually uneasy.

Asthmatic adolescents are described as polite, friendly and agreeable.[11] In 30 unselected cases in an Out-patient Clinic at Guy's Hospital, the nervous element was considered strong in 16, well represented in 9, and weak or absent in 5. No attempt was made to learn if this general nervousness was related to the incidence of acute attacks.

These attacks are regarded by some as manifestations of a conversion neurosis, their unconscious purpose the

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9. Rogerson, C.H., Psychological Factors in Asthma in British Medical Journal, Vol. 1, issue of April 3, 1943, p. 406-407.

10. Dunbar, H. Flanders, Psychoanalytic Notes Relating to Syndromes of Asthma and Hay Fever in Psycho analytic Quarterly, Vol. 7, No. 1, issue of January 1938, p. 25-68.

11. Strauss, E.B., Psychogenic Factors in Asthma in Guy's Hospital Report, Vol. 87, No. 3, issue of July 1937, p. 273-286.

expression of hostility, self-punishment, aggression or domination.[12] In addition, paranoid features are exhibited.

Gillespie remarks on their obstinacy, rage, ambition and optimism.[13] In 40 cases studied, 42% were characterized by obsessions, 32% by repressed hate, 36% by a drive for ascendancy, 20% by submissiveness, and 24% by tendencies of introversion. Their average intelligence was above the general average.

Fifty cases in Massachusetts General Hospital differed slightly. Of them 37 gave convincing histories of causal emotional factors. They were irritable, likely to lose their tempers, and cried without adequate cause. They were likely to whine about small matters, and had phobias. A tendency toward compulsiveness was indicated in the fact that there was exaggerated orderliness in 68%, excess cleanliness in 62%, and fear of water in 40%.[14]

Besides being obsessive, they react to environmental and personal problems in a detached manner.[15] Rigid

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12. Brown, Ethan Allan, and Lionel Goitein, Some Aspects of Mind in Asthma and Allergy in Journal of Nervous and Mental Diseases, Vol. 98, No. 6, issue of December 1943, p. 638-647.

13. Gillespie, R.D., British Medical Journal, Vol. 1, 1936, p. 1285, quoted by Brown and Goitein on p. 639.

14. McDermott, Neil T, and Stanley Cobb, A Psychiatric Survey of Fifty Cases of Bronchial Asthma in Psychosomatic Medicine, Vol. 1, No. 2, issue of April 1939, p. 203-44.

15. Schatia, Viva, The Incidence of Neurosis in Cases of Bronchial Asthma in Psychosomatic Medicine, Vol. 3, No. 2, issue of April 1941, p. 157-169.

in reactions, they conceal their emotional turmoil with intellectualization. Whenever possible they take refuge from a hostile environment by indulging in a phantasy life. They tend to depression which they try to master in the presence of others. Their moderate anxiety is repressed by a fairly severe intellectual control.

In essence Stokes writes that their basic conflict is between the disposition to dominate aggressively and an over-dependence arising from insecurity.[16] These are incompatible. As a result there is restlessness, an easily developed sense of inferiority, and a fear of not measuring up to standards which they have placed at an extremely high level.

On the Szondi test Asthmatics have a stronger Plus h than any other clinical group. Combined with the Plus m this indicates passive yearning so marked as to suggest real immaturity. In adults this means fixation on the original parent-child relationship pattern. It is specifically a non-genital need for affection and caressing in an infantile sense. Because Plus h is a sign of feminine identification it is more likely to cause neurotic symptoms in men than in women.

Plus s is slightly weaker than normal. This suggests that the need for uninhibited aggressiveness is not fully

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16. Stokes, John H, The Personality Factor in Psychoneurogenous Reactions of the Skin, p. 780-801.

accepted. They tend to withdraw from their struggles with the environment instead of exerting themselves to the utmost.

Plus e signifies a dynamically active Superego and repression of a discharge of their pent-up hostility. In combination with Minus hy and Minus k it indicates obsessive compulsiveness to the point of a compulsion neurosis. Plus e together with Minus hy is the most frequent combination found in conversion hysteria.

Strict repression and control protects against anti-social behaviour, but subjects are apt to feel guilty over aggressive urges that are never adequately carried out. Of all the constellations Plus e with minus hy represents the greatest disability in accomplishing free motor discharge of tension. Emotions are none the less felt keenly.

Open d is significant chiefly in connection with decreased interest in outside objects and a general apathy that can be experienced as depression. There is little active searching for a love-object; any readily available is cathected.

By Plus m is indicated an uneasy restlessness and hyper-activity. It also means the clinging to love-objects for the support they can give - if this is excessive it can produce neurotic anxiety. To the Asthmatic Plus m can mean that enjoyment is derived from this passive type of relationship even if the amount is insufficient to

satisfy him.

Strong Minus p indicates that paranoidal tendencies may be developed.

The personality revealed by the Szondi test is thus quite similar to that acquired by clinical observation. It need only be remembered that the attempts to attain dominance are, on the basis of the test, due to the driving force of undischarged aggression rather than to a genuine interest in material objects of the environment.

Diabetes

In a disease as common as Diabetes it has seemed profitable to internists to study the personality of their patients, particularly as its characteristic nature appeared to effect the success of therapy under only optimum conditions. As the result of several careful investigations the pattern of behaviour has been learned. With this the pattern obtained on the Szondi test can be compared.

Meyer observed that the patients had unusually strong tendencies to receive and be taken care of. They

> . . . retained an infantile dependent and demanding attitude and felt frustrated because their demands for attention and love were out of proportion to the reality situation of an adult and consequently were never adequately satisfied. To this frustration the patients reacted with hostility. Diabetes developed when these infantile wishes conflicted with the demands that were frustrated.[1]

The majority came from large families.[2] They suffered considerably from the nervous instability of their parents in 35 per cent of the cases, and from the friction between them. At least one parent lived well into

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1. Meyer, Albrecht, Ludolf N. Hollmeier and Franz J. Meyer, Correlation between Emotions and Carbohydrate Metabolism in Two Cases of Diabetes Mellitus in Psychosomatic Medicine, Vol. 7, No. 6, issue of November 1945,

2. Mira Mar, Pioneers, Psychosomatic Diagnosis, New York, Paul B. Hoeber, 1943, p. 187

the average patient's adult life. All this time a subacute struggle was continued, and the conflict became marked between hatred of the parents and submission to them. Discipline in the parental home was unsatisfying. Three fourths of the males preferred and were dominated by their mothers, but this was true of only one third of the females. The majority were the oldest, the youngest or the favourite child, and very jealous of the distinction.

Because of smothering over-protection rather than strictness , even before the onset of the diabetes, they had great difficulty making the adjustment from an infantile dependent state to a mature independent one.[3] Therefore they vacillated from one to the other. Their desire for maturity was asserted in words and only very little in action. Consequently, at the failure of their endeavours dissatisfaction developed that grew into repressed hostility. Their inadequacy became increasingly expressed as boastfulness , depression and self-injury.

Their jealousy of siblings was unusually severe, almost always of younger siblings who had taken away the mother's attention. They did not try to replace the

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3. Mirsky, I. Arthur, Emotional Factors in the Patient with Diabetes Mellitus in Bulletin of Menninger Clinic, Vol. 12, No. 6, issue of November 1948, P. 187-194.

rival but fell back to immature means of demanding and gaining attention.[4] As adults they repeated the strategy. By the cessation of their diet or their insulin, or by the deliberate encouragement of infection, they promoted the incidence of acidosis so that they might escape from their problems to the protection of the hospital. In the vast majority of cases there was a striking absence of effort to cope with the difficulties that had led to their despair. Rebelliousness against the nursing supervision and a need to assert their independence in a negativistic manner was in accord with their ambivalent attitude, toward persons whom they both needed and wished to hurt.

Menninger observed that hypochondriasis was very frequent.[5] There was physical laziness, an increased desire to sleep, and usually an increased appetite. Mental activities were avoided; there were memory disorders and an inability to concentrate on the responses to questions. They showed emotional apathy, and some form of depression with occasional spurts of gaiety. They were irritable and occasionally became seclusive. Sexual disturbances were common, sometimes appearing as impotence and frigidity.

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4. Rosen, Harold, and Theodore Lidz, Emotional Factors in the Precipitation of Recurrent Diabetic Acidosis in Psychosomatic Medicine, Vol. 11, No. 4, issue of July 1949, p. 211-215.

5. Menninger, William C., The Inter-relationships of Mental Disorders and Diabetes Mellitus in Journal of Mental Science, Vol. 81, No. 333, issue of April 1935, p. 332-357.

These psychological abnormalities had in many cases been intensified when the diabetes was first diagnosed. The traumatic effect of knowing they were afflicted with an incurable disease hurt their pride, exaggerated their fears and feelings of inadequacy, increased their need to be taken care of by others, and stimulated their hostility.[6] Some parents had reacted as if they had caused the disease themselves, and to decrease the feeling of guilt they had they over-protected their offspring to an even greater degree.[7]

In most patients actual onset was preceded by a sustained conflict.[8] Daniels found that in ten of a series of 23 diabetic admissions depression was an important complication. In 5 of these, the depression was reactive to the loss of a love-object prior to the occurrence of the illness. In others were found long-standing sexual problems that had had taken a large toll of energy. In some there had been merely a long period of grinding work and frustration without relief from continual fatigue.

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6. Alexander, Franz, Psychosomatic Medicine, New York, W.W. Norton, 1950, p. 198.

7. Benedek, Therese, An Approach to the Study of the Diabetic in Psychosomatic Medicine, Vol. 10, No. 5, issue of September 1948, p. 284-287.

8. Daniels, George E., The Role of Emotion in the Onset and Course of Diabetes in Psychosomatic Medicine, Vol. 10, No. 5, issue of September 1948, p. 288-290.

Dunbar reports that in another group the traumatic event, in about half the cases, involved that the patient assume greater responsibilities. To this situation the patients reacted with anxiety, feelings of insecurity, indulgence in food especially sweets, and general hopelessness.[9]

Inability to follow a consistent course of action seems to be characteristic. Changes are made in their lives only after much worry and indecision.[10] More than most groups they consider themselves the victims of their surroundings. Although their educational level is comparatively high, their interests are few and scattered.[11] They have some interest in individual sports but they avoid competition in this sphere just as they do in the vocational sphere. They have a fondness for animals combined with a tendency to enjoy their suffering. There is little addiction to alcohol but a considerable interest in food. As one patient said - "After you have trouble you neglect yourself. Food is your only comfort."

Dislike of sex and children is conspicuous in both men and women. There were, in Dunbar's group, practically

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9. Dunbar, Flanders, Psychosomatic Diagnosis, New York, Paul B. Hoeber, 1943, p.484.

10. --------, op. cit., p. 492-494.

no satisfactory marriages.[11] With their typical lack of initiative they complained for years about their domestic unhappiness, yet made no move to improve the situation. The majority had tried living apart at least once and some of them several times.

Among the males there were 65% passive homosexuals ranging from the neutral mean to types that had overt relationships with other men. All these preferred, and were dominated by, their mothers. Of 27% active homosexual types less than half preferred or were dominated by their mothers. Among the females 57% were active homosexuals, of whom 3.6% preferred and were dominated by their mothers. The others preferred neither parent or had a slight preference for the father. Of the 32% passive homosexual types, all preferred and were dominated by their mothers.

As children they had a tendency to complain and at the same time to submit to adversity with a feeling that they could do nothing to help themselves.[12] As adult patients there was noted in them a reaction to the illness as providing an excellent alibi for their lack of success.[13]

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11. Dunbar, Flanders, Psychosomatic Diagnosis, p. 489-90.

12. --------, op. cit., p. 488.

13. --------, op. cit., p. 492.

It was characterized by

> . . . depression alternating with a feeling of relief because they had an alibi for their inadequacies, and a tendency to project, especially to be suspicious of others. In the depressed periods they blamed themselves for poor judgment, lack of control, and wrong dietary habits, but they were more inclined to project their difficulties on to others, and they showed a marked paranoid trend.[14]

Personal relationships were good only if they could meet the other person more than half way. This they would do reluctantly for a time, and then cease doing. Thus they complained of an inability to keep friends.[15]

This defect frequently caused them to lose their jobs. These were somewhat lower than their educational level would permit, and deviated from the general population by preponderance in Class 2 (proprietors) and Class 3 (clerks, stenographers).[16]

The Szondi profile is consistent with this. The constellation appearing in the Contact vector is Plus d with Minus m. The former implies work that is manipulative rather than creative in nature, the sort that is done by members of the lower occupational groups. In this there

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14. Dunbar, Flanders, Psychosomatic Diagnosis, p.497.

15. --------, op. cit., p. 488.

16. --------, op. cit., p. 502.

is little enjoyment and little sublimation. Objects of the environment are acquired to be mastered or to be overwhelmed with favours. The Minus m signifies a turning away from personal relations, a coldness in social contacts, a denial of the need to obtain love and affection from one's fellows. Therefore it means sadness and loneliness.

These features are apparent in the lives of the diabetics as they accept friends only so long as they can put them under obligation, and not for their emotional value. Their occupations give little scope for artistic enterprise and afford little opportunity for sublimation

A strong Minus p indicates a greater tendency than normal to blame other people for one's misfortunes, and the inclination to be suspicious . This paranoidal attitude is one of the diabetic's conspicuous characteristics.

The inertia and lack of drive is reflected by the weak Plus s. This does not mean actual withdrawal from reality but rather a disinclination to express effectively the natural motor capacities, through vigorous activity.

Sexual immaturity is suggested by the Plus h. It in combination with Plus s, Minus e, Minus hy, Minus k and Minus p indicates the existence of diffuse anxiety due to the repression of emotion, the fear that sexual or aggressive urges may break through into unapproved outbursts of feeling.

Plus h when followed by Plus s, Minus e and Minus m, indicates that the craving to be loved as a child is very strong, is frustrated and may be expressed in pathological symptoms. Plus h is characteristic of children up to puberty when they begin deny the need for maternal caressing.

Another possibility for anti-social behaviour lies in the combination Minus p with Minus m, Plus s and Plus h. In this case it would be the consequence of projection. Since certain objects of the environment are considered the cause of the subject's frustration, they may be justly punished for this, he believes.

The depression of the diabetic is derived, according to the Szondi, from two sources. It is first a consequence of inhibited aggression in the face of a struggle. Second it arises with the denial of the urge to lean on other people for their moral support, and with the constant knowledge that any measure of control over the environment may be challenged at any moment. This interpretation appears to fit with the comments of the patients that they are unhappy because there is nothing they can do about their troubles and because they have no friends.

The Szondi profile as a whole rather fairly represents the personality pattern of the diabetics.

Hypertension

Hypertensive patients have an ill-balanced personality whose chief tendencies are pressure of activity and over-earnestness.[1] They are serious, conscientious, enthusiastic at work - at their infrequent play - and too often at the table. They are usually successful and often die of success.

More than 98 per cent in one series have been closely exposed to serious cardiovascular disease in parent, sibling or friends, and half of them to sudden deaths of parents, siblings or friends, at an early age.[2] This fact is important because of the marked effect of such traumatic experiences during the course of their own illness.

Accidents are encountered with greater than average frequency.[3] Some are basically due to an urge for expressing aggression: with others phantasies of revenge and guilt are associated. In many the patient is being faced directly with the "need to make good."[3]

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1. Herrick, W.W., Factors in the Prognosis of High Blood Pressure in Archives of Internal Medicine, Vol. 3, No. 5, issue of November 1929, p. 467-477.

2. Dunbar, Flanders, Psychosomatic Diagnosis, New York, Paul B. Hoeber, 1943, p. 252.

3. ------ -, op. cit., p. 256.

In early childhood they usually lack adequate parental love and affection. This results in an ambivalent attitude. There is rebellion against the parents because "they protected me too much and wanted to live my life for me," - but there is also a feeling that either parents or society as a parent-substitute should take care of them if they meet misfortune.[4] Since their mothers ranged from gentle but strict to physically violent tyrants, their attitude toward them ranged from strong emotional attachment to admiring fear with a fair amount of suppressed resentment.[5]

Of 182 ambulatory patients, 52% said they were unusually high strung all their lives, 43% said they were unusually quick tempered, 69% said they were unusually sensitive, 70% said they worried easily over trivialities, 94% said they were more active physically than the average, and 97% said they were either high strung or unusually active. They were emotionally hyperactive or physically hyperactive or both. They either displayed a quick temper or were excited in themselves. They walked rapidly. They ate and talked rapidly. They worked rapidly and very thoroughly.

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4. Dunbar, Flanders, Psychosomatic Diagnosis, p. 258.

5. --------, op. cit., p. 264.

In the symptom-free group, who had been exceptionally well all their lives, only 30% were high strung, and 25% quick-tempered, easily excited or sensitive.[6]

They reached a relatively low educational level. Nearly 60% were in the primary school category because they had left school early to attain immediate success if possible at a job.[7] Despite these ambitions 43% remained unskilled labourers. Many were cooks, painters, truck drivers, waiters, firemen, machine operators, brokers and insurance agents. Since their intellectual capacity tended to be average or above, this means that they were inclined to choose an occupation below their potentialities.[8]

Most make a poor sexual adjustment. Many have homosexual tendencies, sometimes acted out. Their marriage rate is relatively high but the attitude toward marriage is ambivalent.[9] By promiscuity they appear to desire to avoid responsibility, yet they also wish to adhere to the cultural pattern. Over their wives, these patients have a compulsive need to demonstrate their superiority, because they are so unsure of themselves sexually.

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6. Ayman, David, The Personality Type of Patients with Arteriolar Essential Hypertension in American Journal of Medical Sciences, Vol. 186, No. 2, issue of August 1933, p. 213-223.

7. Dunbar, Flanders, Psychosomatic Diagnosis, p. 257-8.

8. --------, op. cit., p. 265.

9. --------, op. cit., p. 258.

For most, sexuality is associated with ideas of cruelty, injury and degradation.[10] Marriage commonly is ventured upon soon after the death of a parent, to gain the security of which they were deprived in childhood. This seldom is accomplished. Anxiety results, suffering and disillusionment. Sometimes the conflict is alleviated by alcoholism or promiscuity, but divorce is infrequent from the need to maintain even a semblance of protective care.

Palmer studied 50 patients.[11] Seventy per cent appeared extraverts, varying in mood from elation to dejection, soft-heartedness, sentimentality or mild depression, but usually without abnormally wide swings. On the whole they were smart, enterprising, habitually talkative, gesturing freely, adjusting well in ordinary social intercourse, practical and realistic. Only 3 were considered introverts, reserved, detached, odd or queer in attitude. Twelve showed some qualities of introversion. In 11 were explosive bursts of ill temper; in 4 intolerance to alcohol; in 3 the excess use of alcohol. Four experienced attacks of sudden emotionalism, 4 had dream-like states, one suffered mental blanks under pressure, and one definite hysteria. In 12 were feel-

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10. Robbins, Lewis L., Psychological Factors in Essential Hypertension in Bulletin of the Menninger Clinic, Vol. 12, No. 6, issue of November 1948, p. 195-202.

11. Palmer, Robert Sterling, Psyche and Blood Pressure in Journal of American Medical Association, Vol. 144, No. 4, issue of September 23, 1950, p. 295-298.

ings of handicap, jealousy, suspicion, or a mild tendency to ideas of reference. In none were there outstanding interests in music, art, literature or scholarship. There was no special interest other than their occupation. They tended to be industrious, efficient, practical, materialistic, and adaptable - traits with a definite survival value.

A slightly different picture is presented by Binger.[12] His 24 patients were tense individuals given to states of anxiety and depression. In interpersonal relationships, sex adjustments and in occupational achievements they often revealed neurotic tendencies. These could be traced to the great insecurity of childhood, when there was a strongly unsatisfied dependent relationship to a rejecting parent. Much anxiety seemed to be absorbed in their symptoms: when it was dislodged they went into a state bordering on panic.

Many with generalized tension, exhibiting correct external behaviour, deny that they are nervous.[13] As a defence against the expression of hostility, they show a marked submission to authority, but tension in their skeletal and smooth muscle systems betrays the attempt to inhibit all

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12. Binger, Carl, A Critique of Psychotherapy in Arterial Hypertension in Bulletin of New York Academy of Medicine, Vol. 21, No. 11, issue of November 1945, p. 610-615.

13. Dunbar, Flanders, Character and Symptom Formation in Psychoanalytic Quarterly, Vol. 8, No. 1, issue of January 1939, p. 15-47.

action relative to their chronic rage.

Outwardly they may appear self assured, but they are not satisfied with themselves, and tend toward perfectionism.[14] One sees

> . . . external poise, often gentleness and amiability, beneath which there exists a strong undercurrent of fear which arises from the existence of strongly repressed aggressions usually dependent upon resentment over threats to the patient's dependent security.[15]

Many are socially shy and keep to themselves except at alcoholic gatherings where they may become expansive.[16] This attitude seems to be related to their constant feeling of being judged, their sensitiveness to criticism and fear of not making the grade.

The taking of food appears to be their major means of gaining satisfaction when other resources fail them, a last defence against the depression that impends.[17] Nearly one fifth are actually treated for obesity, and two thirds are concerned about obesity without seeking treatment for it.

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14. Groen, J., and J.H. Riesel, Constitutional and Emotional Factors in Etiology of Essential Hypertension in Nederlandach Tijdschrift v. Geneeskunde, Vol. 92, issue of November 13, 1948, p. 3714-23. Abstract in Journal of American Medical Association, Vol. 140, No. 4, issue of May 28, 1949, p. 436.

15. Menninger, Karl A., Emotional Factors in Hypertension in Bulletin of New York Academy of Medicine, Vol. 14, No. 4, issue of April, 1948, p. 211.

16. Dunbar, Flanders, Psychosomatic Diagnosis, p. 258.

17. --------, op. cit., p. 262.

In 90% of the group the death or breaking off of relations with someone loved is related to the onset of the illness by the patient himself.[18] A period of from several months to a year usually elapses before there are severe symptoms of disease, but the interim is marked with nightmares related to death and separation, and waking up from sleep with palpitation, dyspnea or in a rage.

Once the patients enter hospital they blame their previous doctors for not having helped them adequately, and push all the responsibility for recovery upon the hospital staff.[19] There is a giving in to the passive tendencies, using the illness as an alibi for failure.

The Szondi profile shows both the paranoidal and the passive trends. Strong Minus p represents the lack of understanding between everyday activities and underlying emotional needs. In this group persons and forces of the environment may be blamed so completely for their own misfortunes, that ideas of reference may develop. Anti-social behaviour may occur if the punishment of these objects of the environment is considered justifiable. This sign is e found most frequently in the profiles of the young and of

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18. Dunbar, Flanders, Psychosomatic Diagnosis, p. 263.

19. --------, op. cit., p. 263.

the aged, and least often in those of young adults who have come to know the nature of their real needs.

The passive tendencies appear in the strong Plus h. This indicates that the early need for affection has not been satisfied and continues to cause tension in the subject. There is little active searching for a love-object - the craving is for a dependent passive type of relationship, with the need to do nothing but enjoy the protective, motherly care.

Sexual adjustment is apt to be poor. The tension indicated by Plus h with Plus s is not discharged. Minus m means that the need to obtain assurance from others is not admitted. As a result the subject must forever prove to himself that he is strong and independent, and in the sexual sphere does so by dominating his wife unmercifully or indulging in promiscuity. He never can become sure of himself as long as his reaction pattern persists.

Perfectionistic trends may be obvious but they rarely become so strong as to constitute a compulsion neurosis. Two signs support this - Minus e and Minus p. Rather the possibility is of anti-social activity: the typical syndrome consists of Plus s, Minus e and Minus m. This combination is present in the hypertensive profile, but does not mean that unacceptable activity must result.

The other driving force revealed is the strong need to master and manipulate the environment, in strong Plus d.

It signifies the attitude of the materialistic extravert who possessively surveys his possessions with satisfaction at his ownership of them. They are a sign of his power and independence, but in their own right do not furnish him with emotional support. His mode of acquiring them may be persistently ruthless, and the constellation consisting of Plus s, Minus e, and Minus m further adds to the likelihood of anti-social aggressiveness being exhibited.

The tension caused by the urge to express hostility may be considerable. Plus s indicates that the desire for aggression is accepted, but the Minus e indicates that the free expression of it is prevented. Inevitably at intervals some of the emotion that is accumulated is discharged in uncontrolled paroxysms, but relief is not complete nor more than temporary.

In the attainment of power over the environment, the Minus m prevents the satisfaction of knowing that one's friends are co-operating to aid one's efforts. The need to lean on them for a measure of support is not admitted. Interpersonal relationships can only be cold, business-like associations, and the subject, who has cut himself off from the help of society, finds himself lonely and unhappy. Faced also with the potential loss of his possessions, in the Plus d, he tends to slip into depression. This Szondi picture of the hypertensive is very similar to the clinical one.

Rheumatic Heart Disease

Patients suffering from Rheumatic Heart Disease are often pictured as red-headed individuals with blue or hazel eyes, and some studies seem to show that even their immediate relatives are of this type more often than would be expected on the average.[1] They are generally small and thin, with smooth untroubled faces that bear a childish expression.[2] In one group 76% were either the oldest or the youngest in the family, including in the figure the 16% who were only children.[3]

Culturally they have a strikingly uniform background of lower middle class type, and their standards of living are consistent with this.[4]

The family history includes the incidence of rheumatism or cardiovascular disease in 44% of the cases, and diabetes in 20%, with frequent allergies of various types.[5]

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1. Irvine-Jones, E., Acute Rheumatism as a Familial Disease in American Journal of the Diseases of Children, Vol.45, 1933, p. 1184. Abstract in Canadian Medical Association Journal, Vol. 31, No. 2, issue of August 1934, p. 222.

2. Dunbar, Flanders, Psychosomatic Diagnosis, New York, Paul B. Hoeber, 1943, p. 433.

3. --------, op. cit., p. 432.

4. --------, op. cit., p. 416.

5. --------, op. cit., p. 416.

Three fifths of the patients give no history at all of joint pains; the others have vague recollections of growing pains that are not too suggestive of acute rheumatic fever.[6] The latter type of discomfort is probably not a conversion symptom, but on the basis of prolonged fatigue and emotional strain.[7] Bad home conditions may also help to produce the restless sleep, night terrors, and nervous tics that are commonly found in rheumatic children. The remainder of the health record is poor, with predominance of respiratory and gastro-intestinal disorders, allergies and menstrual disturbances.[8]

From childhood up there would appear to be exposure to experience that would not be conducive to a sound emotional development. The incidence of nervousness and serious mental disease in their families is relatively high.[9] This implies observation of emotional upsets in persons to whom they have strong attachment. Traumatic episodes tend to occur frequently, in the majority of cases as severe frights.[10]

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6. Dunbar, Flanders, Psychosomatic Diagnosis, p. 417.

7. Neustatter, W.L., Nature and Relationship of Functional Nervous Disorders to Rheumatism in Childhood in Guy's Hospital Report, Vol. 87, 1937, p. 8-28.

8. Dunbar, Flanders, Psychosomatic Diagnosis, p. 417.

9. --------, op. cit., p. 416.

10. --------, op. cit., p. 418.

There is fear of both parents that produces a dependent reaction , usually toward the parent who is the more terrifying.[11] The mothers particularly are very strict. In other patients preference is usually for the gentle and understanding parent, but these individuals seem to esteem and remember with affection the more brutal one of the two. Forty-per cent lose a parent before they are 16 years of age, but in 50 % of the cases the mother is still alive when the child reaches maturity.[12] By that time he is timid, of a worrying disposition, and with mood swings that indicate emotional instability.[13] Fears, nightmares, phobias and anxiety are persistent.

They leave school relatively early partly as a result of illness but partly because they wish to feel independent.[14] Vaguely ambitious they have an urge for activity and adventure. A satisfactory vocational adjustment however is made by less than a quarter of them - as they work as waitresses, post office employees, mill hands and factory workers, clerical workers, shipping clerks, secretaries and stenographers.[15]

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11. Dunbar, Flanders, Psychosomatic Diagnosis, p. 424.

12. --------, op. cit., p. 420.

13. Neustatter, W.L., Nature and Relationship of Functional Nervous Disorders to Rheumatism in Childhood, p. 28.

14. Dunbar, Flanders, op. cit., p. 418.

15. --------, op. cit., p. 419.

Socially they set out to make themselves liked, as if in compensation for their sense of inadequacy.[16] In the main they succeed because of their desire to please, and their childish appeal. They become good story-tellers.[17] They indulge in an exhibitionistic type of activity. They talk rather freely about their emotional problems although they seem not to relieve their tension in the process.[18] (If the latter becomes too burdensome they seek relief in a more extensive phantasy life.)

Their sex lives are marked by a masochistic attitude, with fears of marriage and pregnancy.[19] About two thirds of the men and three quarters of the women marry, and only one third of the married patients have children.[20] While there is some homosexual tendency it is much less than is found among the diabetics. In relation to parents, spouse and children they play the role of martyr.[21]

An illustration is given of the underlying hysterical tendency that is evident in much of their behaviour.

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16. Dunbar, Flanders, Psychosomatic Diagnosis, p. 421.
17. --------, op. cit., p. 419.
18. --------, op. cit., p. 430.
19. --------, op. cit., p. 419.
20. --------, op. cit., p. 416-417.
21. --------, op. cit., p. 424.

> This history shows a child in early conflict with strict and quarreling parents, and his attempt to solve this conflict by becoming like his father: "I see myself taking care of Mother after Father dies. It was too much worry and overdoing that got him down, and I'm going the same way," etc. The parallel conflict in the realm of sex is indicated in his preference for boys, fear of girls, repression of sexual impulses in general, and his adoption of the ideal of chastity, and devotion to his mother whose favorite he succeeded in becoming. He shows clearly the anxiety and the tendency to hysterical mechanisms so characteristic of patients with rheumatic heart disease.[22]

Disturbances of breathing, palpitation and conversion symptoms are present in childhood long before there is any cardiac damage, or any evidence of rheumatic disease. They occur too during the course of the illness at such times as the heart is comparatively well compensated.[23]

Dreams and phantasy life become more prominent as repression of their emotions is more rigid, and often as cardiac involvement becomes more serious.[24] Exacerbations of the illness occur, on the other hand, whenever their limitations of freedom and contact are further reduced.[25]

They have little sense of reality about the seriousness of their disease, attempting to deny it or make

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22. Dunbar, Flanders, Psychosomatic Diagnosis, p.427.

23. --------, op. cit., p. 429.

24. --------, op. cit., p. 430.

25. --------, op. cit., p. 434.

light of it.[26] Exploiting it nevertheless in an infantile desire to be taken care of, they tend to do what they like contrary to the doctors' orders and to enjoy their own suffering.[27] Although maintaining that they are somewhat disillusioned toward religion, they use its practices as an excuse for very long walks or other activity not approved by their physicians, and are particularly likely to suffer anxiety attacks and claustrophobia while in church. Among the males there is a tendency to become religious zealots.[28]

Repressed, with few interests, with subnormal tendencies to express their resentment, they rarely feel the need to make up their minds about anything. They sit back and talk about what might have been. Guilt that coloured the initial reaction to their illness is carefully concealed.[29]

The Szondi clearly reveals the emotional control. In the Plus s, slightly higher than normal, the urge to express hostility and aggressive behaviour is consciously accepted. By the Plus e there is an indication that the urge is not allowed to be relieved by appropriate activity. The strongest suggestion possible is made by Plus e with Minus hy that

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26. Dunbar, Flanders, Psychosomatic Diagnosis, p. 422.

27. --------, op. cit., p. 431.

28. --------, op. cit., p. 425.

29. --------, op. cit., p. 434.

the Superego is rigid in controlling the release of any hostile emotions. The sense of guilt is very close to the surface - to smother it the development of phobias and compulsive behaviour is usual. So is an excess of interest in religious observances. It is a typically adult pattern for no child, unless precocious, has strong repressive tendencies of the degree of severity here indicated. The incidence of hysterical symptoms may be expected to be greater than normal, but the presence of Minus hy is against the occurrence of a frank conversion neurosis. The fact that Plus e is found in Schizophrenia frequently is of interest - in that during the course of a mild insidious attack of the Rheumatic Fever episodes occur that clinically are indistinguishable from Schizophrenia.[30]

The Minus hy is a repetition of a childhood reaction found most constantly in prepuberty and puberty. This is the time when day dreaming and a vivid phantasy life exist, when emotions are felt strongly that are not acted out. In the rheumatic patients it increases the possibility of homosexual drives, confirming the suggestion found in the Plus h and the Plus s (which being signs of female and male identification respectively make possible the development

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30. Rochas, A., and G. Vile, The Problem of Rheumatic Disease and its Relation to Mental Diseases in Rev. Chilena de Neuro-Psiquiatria, Vol. 1, 1947, p. 133-140. Abstract in Journal of American Medical Association, Vol. 138, No. 8, issue of October 23, 1948, p. 598.

of abnormal sexual drives in both sexes). In itself it is an indication of diffuse anxiety.

The Plus h is not excessively strong, but in combination with Plus m accentuates the need to receive tenderness and affection from the love-objects of the environment. It points toward emotional immaturity. In conjunction with Plus s it reveals unsatisfactory sexual adjustment, a state very commonly existing among the patients of this group.

In the strong Plus d is the representation of the compensatory love for physical activity, the non-inspiring work of lower occupational levels, the lack of satisfying sublimation in life. The tendency of these patients to engage in over-active activity and to select unskilled , and active work such as truck driving has been clinically observed.[31]

The Plus m describes the patients' efforts to be accepted socially, to be liked if even only for their ability to bear pain. They appear sociable, they become popular as members of a group, but their manner is not free and easy. In it there is the element of anxiety, and in this profile with its Plus d there is the added component of depression.

Minus k with strong Minus p shows efforts to con-

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31. Dunbar, Flanders, Psychosomatic Diagnosis, p. 421.

form quietly with environmental demands, by repressing those individual urges that would make adjustment less complete.There is at the same time continual unconscious projection of their needs through their behaviour, without any awareness of the process. There is even the tendency to hold the environment responsible for all personal misfortunes and a disinclination to do a fair share in improving unsatisfying situations.

The picture of dependent, repressed irresponsibility is much like that revealed by clinical study, through interviews.

Thyrotoxicosis

It is an easy matter to acquire from the literature a definite consistent picture of the thyrotoxic patient, as she or he appears to the clinician.

At the New York Post-Graduate hospital, 60 cases were analyzed by Mittelmann.[1] The majority showed over-dependence on love and shelter, progressing in some instances to a failure of adult sexual orientation. They admitted repudiation, or fear of repudiation, by their parents - or had suffered their loss at an early age. Of this there appeared to be three results. They had with sacrifice and self-abnegation sought approval; they had developed strong resentment and hatred against their parents; where they had been bereaved they went about yearning for a parent-substitute. High ideals had been formed after the example of their very strict parents. These caused them to take a serious view of living, and of their social and moral duties.

During childhood, in which they felt less wanted than a sibling, they had eventually by special efforts

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1. Mittelmann, Bela, Psychogenic Factors and Psychotherapy in Hyperthyreosis and Rapid Heart Imbalance in Journal of Nervous and Mental Diseases, Vol. 77, No. 5, issue of May 1933, p. 465-488.

become the winner of parental affection, and the pattern of striving continued.[2] They tried always to bind themselves to someone by smothering solicitude.

Unless they can give of themselves these persons feel unwanted and rejected.[3] In return for their love they expect the same unswerving fidelity, and to have their offerings rebuffed makes them resentful and depressed. They attempt to attach their children to them as they were attached to their mothers, worrying about them in obsessive fashion.[4] Children however are not desired except as props to their own needs. The husbands become secondary figures, who must lavish affection on them continually in order to avoid complaints. Attachment of the husbands to their own mothers as evidenced by the slightest signs of filial regard disturbs the household. Desires of the children to assert themselves or to marry cause depression and anxiety. This attitude must resemble that which their strict, self-sacrificing mothers showed as they emphasized conformity and propriety. (Their fathers usually had been

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2. Menninger, William C., Emotional Factors in Organic Disease in Annals of Internal Medicine, Vol. 31, No. 2, issue of August 1949, p. 207-215.

3. Lidz, Theodore, and John C. Whitehorn, Psychiatric Problems in a Tyroid Clinic in Journal of American Medical Association, Vol. 139, No. 11, issue of March 12, 1949, p. 696-701.

4. Lidz, Theodore, Emotional Factors in the Etiology of Hyperthyroidism in Psychosomatic Medicine, Vol. 11, No. 1, issue of January 1949, p. 2-8.

weak personalities or been absent from home.)

The first impression is that of submissiveness.[5] They cry easily when they are hurt. A harsh word or look disturbs them for a protracted period. There is little give and take in their conversation. They are shy and introverted. Their moods swing unduly between ecstasy and depression. They are imaginative day-dreamers, with strong leanings toward the mystic. As sensualists they feed on emotional, physical and even chemical stimulation. They are fussy and over-conscientious, passing through life seeing the leaves instead of the trees. Sexually they are immature, with commonly difficulties in adjustment. Frequently there is maternal fixation which has a higher incidence among the females because these were more subject to overprotection than the males. Against men there is great resentment and aggression in all female patients.[6]

The essential ingredient in the insult they suffered is fear usually.[7] From the beginning hysteria has been associated, with common findings of anaesthesia, paralysis, and retracted visual fields. From optimism with self-reproach

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5. Moschcowitz, Eli, Disorders and Personality in New York State Journal of Medicine, Vol. 48, No. 8, issue of August 1948, p. 1375-1403.

6. Lorand, Alex, and Eli Moschcowitz, A Psychoanalytic Interpretation of the Constitution in Graves' Syndrome in Journal of Nervous and Mental Diseases, Vol. 79, No.1 Issue of January 1934, p. 136-152.

7. Conrad, Agnes, The Psychiatric Study of Hyperthyroid Patients in Journal of Nervous and Mental Diseases, Vol. 79, No. 5, issue of May 1934, p. 505-529.

they may regress to melancholia and simple recurrent mania. They may exhibit instead neurasthenic states, anxiety, phobias and obsessions.

Many endure other kinds of stress well.[8] They make friends easily. There is however a tendency to marry late due to conflicts over leaving home. In the male patient there is a tendency to be dependent on his wife as he was on his mother, and he is a less adequate adult citizen than the average female patient.

Both sexes display gaiety, assaultiveness, moroseness and whining. They are reserved individuals who cannot express themselves easily to others. The females especially are subject to depression for they are making desperate efforts to live up to high maternal standards.

Because of feelings of insecurity they tend to value their savings and their jobs highly.[9] Any threat to their security is extremely traumatic. With a strong sense of responsibility they carry out their duties, suffering in silence rather than jeopardize their position.

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8. Conrad, Agnes, The Psychiatric Study of Patients with Hyperthyroidism in Journal of Nervous and Mental Diseases, Vol. 79, No. 6, issue of June 1934, p. 656-676.

9. Brown, Warren T., and Edwin F. Gildea, Hyperthyroidism and Personality in American Journal of Psychiatry, Vol. 94, No. 1, issue of July 1937, p. 59-76.

The perpetual struggle against anxiety may be manifested by denial, a compulsive urge to undertake those activities which are most feared.

> The pseudo maturity, the exaggerated effort to assume the maternal role through frequent pregnancies and excessive care of others, the counterphobic attitudes - all reflect the attempt of the patient with hyperthyroidism to master anxiety by self-sufficiency. This constant effort toward self-sufficiency, the patient's need to become prematurely independent, can be explained by the fact that the anxiety induced by a threat to security in early childhood could not be alleviated by dependence upon others.[10]

It has been written that they respond to the environment like an Aeolian harp.[11] Both in their mental processes and movements they are quick, but they tire easily mentally and physically. They stand all shocks badly reacting excessively, with hysterical phenomena always latent.[12] Restless, easily irritated, subject to emotional outbursts, they succumb to tears and laughter often without knowing why. They can carry a fairly heavy load without its being evident, but once irritated they are as difficult to manage as a drunken sailor. Their lack of assurance at such times is striking-

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10. Alexander, Franz, Psychosomatic Medicine, New York, W.W. Norton, 1950, p. 179-180.

11. Moschcowitz, Eli, The Hyperkinetic Diseases in American Journal of Medical Sciences, Vol. 206, No. 5, issue of November 1943, p. 576-599.

12. Moschcowitz, Eli, The Nature of Graves' Disease in Archives of Internal Medicine, Vol. 46, No. 4, issue of April, 1930, p. 610-629.

ly absent.[13] Exhilaration and depression both impair their judgment. They may be cantankerous and most quick to take offence.[14]

In the average case, the speech is eager and hasty. Attention is concentrated but unsustained.[15] Their many interests are shown in the speed with which they change the subject in conversation. In their moodiness they tend to form hasty conclusions. As the condition progresses they may develop ideas of reference, periods of bewilderment and excitement amounting at times to confusion, with even visual hallucinations.

Kiene noted 4 of 16 post-operative cases in which the patients had developed a syndrome very similar to involutional melancholia, with ideas of unreality, agitation and delusions of self-condemnation.[16] All had lived stormy lives in constant uncertainty, with inadequate methods of satisfying their needs. At the end they had come to believe

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13. Dunlop, Harold F., and Frederick P. Moersch, Psychic Manifestations Associated with Hyperthyroidism in American Journal of Psychiatry, Vol. 91, No. 6, issue of May 1935, p. 1216-1238.

14. Prior, Guy P.U., Some Mental Cases with Endocrine Considerations in Journal of Mental Science, Vol. 66, No. 272, issue of January 1920, p. 23-46.

15. Bram, Israel, The Psychic Factors in Exophthalmic Goitre in Journal of American Medical Association, Vol. 77, No. 4, issue of July 23, 1921, p. 283-285.

16. Kiene, H.E., and H.H. Dixon, A Study of Psychogenic Factors in Thyrotoxicosis in Journal of Nervous and Mental Diseases, Vol. 74, No. 4, issue of October 1931, p. 483-493.

they were the only righteous persons in a wicked froward world.[17]

The majority with phobias are female. In 105 of a series considered by Ficarra, 45 had claustrophobia, 22 were afraid to be alone, 15 feared crowds, 14 had acrophobia, and 9 fear of the opposite sex.[18]

There are fears of fire, darkness, open places and of suffocation. A unique feature is the frequency of dreams of death, caskets, ghosts and dead persons.[19]

By the Szondi test, the obsessive and compulsive tendencies are shown by the Plus e and Minus hy. This combination represents very strict emotional control. There is unexpressed aggressiveness with repression of the tender feelings. The subjects, tense and guilty because of the anti-social urge that exists strongly although it is not relieved, compensate by adopting a critical and moralistic attitude toward the world. They frequently become too religious, as they interpret religion, but they may be content with participation in problems of social welfare. By

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17. Brown, W. Langdon, Endocrines and Mental Disorders in Practitioner, Vol. 137, No. 1, issue of July 1936, p. 1-13.
p. 1-13.

18. Ficarra, Bernard J, and Ralph A. Nelson, Phobia as a Symptom in Hyperthyroidism in American Journal of Psychiatry, Vol. 103, No. 6, issue of May 1947, p. 831-832.

19. Alexander, Franz, Psychosomatic Medicine, New York, W.W. Norton, 1950, p. 179.

this latter activity they are made free to offer advice to others on how they should conduct their affairs and manage their lives. Regardless of the intensity of the unexpressed aggression, it is almost a certainty that there will be no anti-social or criminal activity.

The Plus h indicates that one source of the ever-present anxiety is due to frustration in the effort to secure love and affection sufficient to satisfy them. Together with Plus m this suggests sexual immaturity. The feminine identification indicated suggests that men may be more likely to develop a latent homosexuality.

The weak Plus s is in accord with the failure to show natural hostility in the face of a fight against the environment. Aggression is somewhat inhibited, and because it is so produces the feeling of tension.

Another indication of the severe Superego is in the Minus k. Unacceptable impulses representing certain unsatisfied needs are firmly repressed. Their nature is never learned, and the needs are not met. Therefore tension persists. It is partly alleviated by the tendency to blame other persons when life becomes difficult. This mechanism is shown by the Minus p.

There is a vivid phantasy life with day-dreaming, increased by the fact that there is unwillingness and inability to act out the emotions.

One of the most striking parts of the profile is the strong Plus d followed by Plus m. This indicates a strong urge to control and manipulate the environment. There is strong possessiveness, and perseverence in securing and maintaining mastery. Once obtained the love-object is overwhelmed with gifts and attention. Depression and insecurity exist at the realization that control may at any time be lost.

The Plus n shows that the love-object is also necessary to the subject as a source of emotional support. In this respect the subject must therefore possess a passive attitude toward it, and can be rebuffed if affection is not shown him. He is capable of giving love in return, but at the same time he endeavours to control it as one of his possessions.

The acquisition of love-objects on these terms takes much energy. The subject shows hyper-activity and an unsatisfied restlessness, for he is never free from the fear of loss. There may be a fairly great difficulty in concentrating and feelings of insufficiency. His behaviour is sociable but not free and easy.

In short the profile prepared from results of the Rorschach test resembles closely the clinician's idea of a typical thyrotoxic patient.

Tuberculosis

For many years the clinical conception of a typical Tuberculous patient was confused and variable. "Contradiction contradicts contradiction, and the tuberculous patient is described as anything between an insane criminal and a saint too ethereal for this mundane sphere." [1] It is now possible however to obtain from the literature a fairly consistent picture. With this the personality suggested in the Szondi test can be compared.

As children these individuals reacted to the disease with overwhelming anxiety, morbid preoccupations and fear of death.[2] They tried to deny their illness with overactivity and by projections of guilt feelings for being incapacitated. Many showed suggestibility, irritability, depression, fear, anxiety and selfishness.[3] They had frequent nightmares. At times they conserved their energy so strictly that little was used in making a healthy adjustment to the situation.

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1. Brown, Lawrason, The Mental Aspect in the Etiology and Treatment of Pulmonary Tuberculosis in International Clinics, Vol. 3, 43rd Series, 1933, p. 149-174.

2. Dubo, S., Psychological Study of Children with Pulmonary Tuberculosis in American Journal of Orthopsychiatry, Vol. 20, 1950, p. 520, Abstract in Canadian Medical Association Journal, Vol. 63, No. 6, issue of December 1950, p. 617.

3. Brown, Lawrason, The Mental Aspect in the Etiology and Treatment of Pulmonary Tuberculosis, p. 149-174.

It is believed that in some cases at least the disease develops after long periods of tension, ambivalence and frustration.[4] These culminate in fatigue, hopelessness and depression. Wittkower observes that patients seem to have in common an inability to deal adequately with aggressive impulses and are prone for varying reasons and in different ways to turn these impulses against themselves.[5]

When 100 American soldiers of World War 2 were interviewed for one hour each, it was learned that most had obsessive and compulsive characteristics.[6] An unusually large number were unable to dance. Eighty-seven attended church fairly regularly. Eighty-eight were interested in reading. There was a relatively large number of moderate drinkers and inveterate smokers. Shyness was reported in 31, irritability for slight causes in 26, feelings of definite inferiority in 6, excessive worry over trivialities in 15, enuresis and biting finger nails in childhood in 16, superstition in 6, and compulsive traits in 16. There was

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4. Binger, Carl, The Psychobiology of Breathing in Annals of Internal Medicine, Vol. 11, No. 1, issue of July 1937, p. 195-208.

5. Wittkower, Eric, Psychosomatic Medicine in British Medical Journal, Vol. 2, issue of Aug. 28, 1948, p. 435.

6. Friedman, Jacob H., G.J. Kastlin and S.I. Kooperstein, Psychosomatic Factors in Pulmonary Tuberculosis in Diseases of Chest, Vol. 12, No. 6, issue of November 1946, p. 539-549.

in an unusually large number a history of military arrest.

A subsequent survey of similar tuberculous Veterans revealed obsessive and compulsive drives relating to orderliness and cleanliness, independence, resentment toward authority, and optimism.[7] On a questionnaire they rated themselves as between "neutral" and "fairly unhappy". The general morale was considered by them as "fair".

The prevalence of optimism was studied both by Todd and Strecker in an effort to confirm or deny the old notion of euphoria among the tuberculous. In 1938 the latter presented the results of interviewing 2000 patients, 75 of whom he studied intensively.[8] He had found depression, fatalism, anxiety and apprehension to be the prevailing moods. In patients who were superficially elated, adequate cause other than the disease was determined. There was an undercurrent of bitterness and frustration, with illconcealed anger.

Ten years later, Todd and Wittkower also noted the habitual mild, overt or concealed depression and anxiety.[9]

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7. Daitz, Bernard Martin, and M. Singer, Extramedical Services in an Army Tuberculous Hospital in American Review of Tuberculosis, Vol. 55, No. 5, issue of May 1947, p. 459-470.

8. Strecker, Edward A., and Francis J. Braceland, Mental Attitudes of Tuberculous Patients in Mental Hygiene, Vol. 22, No. 4, issue of October 1938, p. 529-543.

9. Todd, G.S., and Eric Wittkower, The Psychological Aspects of Sanatorium Management in Lancet, Vol. 254, No. 2, issue of January 10, 1948, p. 49-53.

The offsprings of these reactions and defences against them were defiance and strange as it seemed ultra-cheerfulness. Some patients put up a bold front that was impressive. The true spes phthisica was rare. Some liked to be mothered, others resented being treated as children. Changes or omissions in the nursing routine caused extreme resentment.

After two years of observation in an institution at which medical, surgical, psychiatric and tuberculous patients received treatment, Walker concluded that by comparison the fourth group were overly dependent, very sensitive to slights, critical of the staff and their fellow patients, selfish and egotistical.[10]

Other workers noted this psychopathology and considered it significant. In 16 consecutive admissions, excluding persons whose diagnosis was made more than 5 years previously, Benjamin found only 3 reasonably healthy personalities.[11] In the remainder dependency conflicts or relatively uninhibited dependency strivings were not only obvious but played an important role in their functioning during hospitalization. Inhibited conscious hostility had an unfavorable

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10. Walker, John L., Some Personality Characteristics Noted Among Tuberculosis Patients with Implications for a Counselor in Mental Hygiene, Vol. 33, No. 3, issue of July 1949, p. 453-456.

11. Benjamin, John D., Jules V. Coleman and Ruth Hornbein, A Study of Personality in Pulmonary Tuberculosis in American Journal of Orthopsychiatry, Vol. 18, No. 4, issue of October 1948, p. 704-707.

influence on the course of the disease; the capacity to express it was favorable.

At Yonkers Tuberculosis Dispensary a series of 29 cases was recorded as 15 definitely neurotic, 7 psychotic, and 7 psychopathologic personality.[12] The symptoms of these patients were fear, tendency to worry, tendency to cry and irritability. There was no relation between the severity of their physical signs and their emotional symptoms.

Palmer did not classify his patients in this way but he was impressed by their alternating exaltation and grave depression, their restlessness and discontent, their unreasoning complaints.[13] Often there was instability of purpose and lack of self-control.

If one describes the behaviour as a series of progressive stages, intellectual lethargy may be the first sign at onset.[14] In the second stage the patients are said to show three main types of reaction.[15] There may be apathy. There may be impaired powers of concentration, with irrit-

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12. Groom, W.C., Tuberculosis as an Etiological Agent in Producing Neurasthenic Symptoms in Psychiatric Quarterly, Vol. 3, No. 1, issue of January 1929, p. 77-81.

13. Palmer, George Thomas, Psychology of the Tuberculous Patient in Illinois Medical Journal, Vol. 45, No. 1, issue of January 1924, p. 56-58.

14. Berle, Beatrice Bishop, Emotional Factors and Tuberculosis in Psychosomatic Medicine, Vol. 10, No. 6, issue of Novemver 1948, p. 366-373.

15. Munro, D.G. Macleod, The Psycho-pathology of Tuberculosis, London, Oxford University Press, 1926, p. 147.

ability at trifling annoyances. There may be an exaggeration of a previous impulsiveness, with heightened intellectual and imaginative powers, and slight suspiciousness. Finally there develops fatigue, the avoidance of intellectual effort and a curious apathy concerning the gravity of the condition.

The varied picture is partly caused, according to Muhl, by the fact that the personality is two-fold.[16] It shows on the one hand strongly marked introvertive qualities suggestive of a schizophrenic pattern, and extraverted tendencies with a manic-depressive swing on the other. The behaviour thus varies according to which group of tendencies is in the ascendancy.

In the results of the Szondi test the passive aspects are very clear. The Plus h shows the need for affection, the desire to be mothered. The weak Plus s suggests less physical activity than normal and the failure to display aggressiveness sufficiently to relieve their tension. The Minus d shows an inclination to be passively attached to one love-object rather than the mastery of many objects. Together with Minus m and Minus p, in an adult, it indicates resignation. There is a high frustration tolerance in connection with the acquisition of a love-object, because these people do not permit themselves to hope that they can obtain pleas-

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16. Muhl, A.M., Tuberculosis from the Psychiatric Approach in Psychoanalytic Review, Vol. 16, No. 4, issue of October, 1929, p. 397-403.

ure from the environment.

Minus m indicates the restlessness that can suggest to an on-looker great activity and aggression. It is found in manic patients during their anti-social phase, because it is essentially the denial of a need for emotional support from the environment.

Weak Plus s is the sign of repressed aggression. From such can arise guilt feelings, and resentment against authority. In combination with Plus h, Minus e and Minus hy, it indicates a fear that there may be a socially undesirable breakthrough of sexual and aggressive impulses into uncontrolled activity. The poor control of strong affects as shown in the Minus e can alone account for the temper tantrums and irritability.

Minus hy suggests shyness because of the inability to express emotions, sensitivity to the opinions of others, and a resultant tension that explains the reason for difficulties in concentration and feelings of inferiority.

There is depression of two kinds. First is the reaction to the feeling of guilt at harboring hostility. Second there is a sadness and loneliness at refusing to satisfy the need for dependence on other individuals.

Selfishness and egocentricity can be inferred from the poor control of aggressive feelings, as in the Minus e. The latter suggests a rather lax Superego.

Disturbing anxiety arises from two sources. There is the lack of equilibrium in the sexual vector as shown by the strong Plus h combined with the rather weak Plus s. In addition, Minus e with Minus hy is the sign of unstable emotional control combined with inadequate discharge of tension. Diffuse anxiety necessarily results.

The possibilities for psychopathology are conspicuous. Minus e indicates suggestibility and the development of conversion hysteria. Minus p shows the tendency to have ideas of reference, or at least that of blaming everyone else for the failure to attain satisfaction. Minus hy means that obsessive compulsiveness may develop. Neurotic symptoms do not necessarily develop on the basis of the profiles that were obtained in the testing, but the potentialities are present.

Thus it would appear that the personality pattern described by clinicians as common in tuberculous patients is very similar to that suggested by the Szondi technique.

Peptic Ulcer

The typical ulcer patient has been described as a man who is encountering obstacles that prove to him a trial and handicap, which he must because of his nature endeavour to overcome.[1]

He is pictured as having a lean and hungry look, with deep sullen eyes, sharp facial lines, a firm mouth, a prominent jaw, and a hard tense expression.[2]

Such individuals have a desire to mould the environment and to dominate people and situations. They are ruthless in trying to attain their ends, and if they fail they feel great inward resentment. Rigidly minded they bear strong grudges and have strong likes. These latter however are subject to change without notice. They express themselves violently on every topic, are self-conscious and give as little as possible of themselves to interpersonal relationships.[3]

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1. Hartman, H.R., Neurogenic Factors in Peptic Ulcer in Medical Clinics of North America, Vol. 16, 1933, p. 1357, quoted by Franz Alexander, Psychosomatic Medicine, New York, W.W. Norton, 1950, p. 101.

2. Gilsenan, B.M.C., Dyspepsia of Peptic Ulcer Type and its Relationship to Personality Type and Anxiety in Practitioner, Vol. 156, No. 936, issue of June 1946, p. 456-458.

3. Moschcowitz, Eli, and Mata B. Rondin, Association of Psychosomatic Disorders and their Relation to Personality Types in Some Individuals in New York State Journal of Medicine, Vol. 48, No. 12, issue of June 15, 1948, p.1375-1403.

The disease tends to run in families, who show the urge to abnormally high reactivity.[4] They are often keen, wideawake and sensitive, driving themselves all day and part of the night, responding too much to things that break into their routine, unable to relax. Many are outwardly calm, but inwardly tense, anxious, fearful or actually seething.

Activity fluctuates because their endurance is limited.[5] Often their energy is divided among several enterprises, and they insist on a high standard of achievement. They take on more responsibility than they are able to carry, and take the world much too seriously, including themselves, their relatives and their friends.

Frequently they become successful because of their persistent ambitious efforts. Their characteristics, in fact, are eulogized as marks of a promising business man in the present American culture. They are likely to carry on until they are nervously and physically exhausted.[6]

Rehabilitation is prompt after taking adequate food,

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4. Alvarez, Walter C., The Causes of Peptic Ulcer in American Journal of Surgery, Vol. 18, No. 2, issue of November 1932, p. 207-231.

5. Robinson, Samuel C., On the Etiology of Peptic Ulcer in American Journal of Digestive Diseases and Nutrition, Vol.2, No. 6, issue of August 1935, p. 333-342.

6. Rivers, Andrew B., Clinical Consideration of the Etiology of Peptic Ulcer in Archives of Internal Medicine, Vol. 53, No. 1, issue of January 1934, p. 97-119.

short periods of rest and relief of anxiety.[7] As mental sprinters they can be ideal opportunists.

In the front line of life's activities they expose themselves to affronts and disappointments more frequently than their placid neighbours.[8] Pride in their work is very great and if any project turns out to be not successful, keen anxiety is aroused. If assigned to work that is considered unfair, or unsuited to their experience, or if they are blamed unjustly on any occasion, they experience strong resentment and frustration that swings them toward depression.[9]

Lack of sufficient rest is partly responsible for a failure to meet life situations calmly, for the loss of confidence they often feel, for their failure to contribute what they consider a satisfactory day's work.[10]

An occupational survey confirmed for Doll the correlation between "anxiety at work" and the distribution of

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7. Draper, George, and Robert B. McGraw, Studies in Human Constitution in American Journal of Medical Sciences, Vol. 174, No. 3, issue of September 1927, p. 299-313.

8. Davies, Daniel T., and A.T. Macbeth Wilson, Observations on the Life-history of Chronic Peptic Ulcer in Lancet, Vol. 233, No. 2, issue of December 4, 1937, p.1353-60.

9. Allison, R.S., Peptic Ulcer in the Royal Navy in Lancet, Vol. 240, No. 1, issue of May 10, 1941, p. 596-600.

10. Morrison, Samuel, and Maurice Feldman, Psychosomatic Correlations of Duodenal Ulcer in Journal of American Medical Association, Vol. 120, No. 10, issue of November 7, 1942, p. 738-740.

peptic ulcer. Among managerial posts with responsibility and resultant worries the disease was common. Agricultural workers were relatively free. Doll goes on to write

> Duodenal ulcer subjects are frequently of "the worrying type": they brood over difficulties and worry inwardly. They are particularly sensitive and fussily tidy and therefore little things readily produce nervous tension. They are particularly conscientious and expose themselves to more difficulties than their easy-going fellow men. Frustration and resentment are two emotional states which particularly develop as a consequence of the interaction of their Personality and the difficulties of the modern world. [11]

As a child the patient sought security by attempting to meet the rigid demands of the authoritative figure, anticipating failure because of his strong feeling of inadequacy. To allay his fears of failing he struggled hard. At adolescence urges emerged that he felt must be suppressed, because of fears that security would be threatened if he pursued any but the goals set for him. Resentment accompanied the need to deny his own inclinations. [12]

Guilt stems from the hostility toward people for whom he desired to feel approval. It arises from his failure to achieve or give affection, from failure to obtain

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11. Doll, Richard, and F. Avery Jones, Environmental Factors in the Etiology of Peptic Ulcer in Practitioner, Vol. 162, No. 967, issue of January 1949, p.44-50.

12. Zane, Manuel D., Psychosomatic Considerations in Peptic Ulcer in Psychosomatic Medicine, Vol. 9, No. 6, issue of November 1947, p. 372-380.

social esteem, from failure to maintain self-esteem.[13]

In large measure his unhappiness is the result of the failure of his home to lend a stable background. There was the unhappy married life of his parents, the loss of his father early, the early re-marriage of his mother, rejection by a parent or foster-father, or anxiety of parents who created in the child doubts regarding his adequacy. Often he tried to gain approval through a perfect performance, but no degree of security was obtained by this until puberty or later. As an adult he assumed compensatory bravado, arrogance and defiance. With relentless application to business he resolved to achieve at any cost. There was preoccupation with respectability and desire for social approval. Loneliness resulted from necessity because of his refusal to let his family or his friends do anything for him. Repression added to the disinclination to share his sorrows and fears with even his wife created an impression of detachment that was intended to provide protection against hurt; but failure to be given support when it was needed caused profound resentment.

He married to be taken care of, yet was resentful

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13. Mittlemann, Bela, and Harold G. Wolff, Emotions and Gastroduodenal Function in Psychosomatic Medicine, Vol. 2, No. 1, issue of January 1942, p. 5-61.

that this should be. Like half of all the individuals suffering from the same illness he endured an unhappy marriage.[14] Exacerbations occurred when he failed to be made the object of unquestioning love, when he was not appreciated, when he was disgraced by his wife, when he was compelled to live with his in-laws, and when his wife failed to build up in him a sense of security.

To compensate for his resentment he develops obsessive compulsive trends.[15] He practises and demands orderliness, meticulousness, precision, adherence to a strict routine, and an exaggerated degree of cleanliness. He professes great horror at being dependent on any drug. Occasionally his ulcer is quiescent in his so-called manic phases, only to recur when he is depressed.[16] Over-conscientious and intense he takes his pain and drives through it until he cannot endure it any longer.

This persistence in acquiring control over the environment so that it might give him pleasure is indicated

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14. Klein, Henriette R., A Personality Study of One Hundred Unselected Patients Attending a Gastrointestinal Clinic in American Journal of Psychiatry, Vol. 104, No. 7, issue of January 1948, p. 433-439.

15. Sullivan, Albert J., and Thomas E. McKell, Personality Disorders in Gastroenterology in Gastroenterology, Vol. 9, No. 5, issue of November 1947, p. 524-538.

16. Jones, Chester M., The Therapy of Peptic Ulcer from the Point of View of the Internist in Psychosomatic Medicine, Vol. 8, No. 2, issue of May 1946, p. 200-204.

by the Minus d in the Szondi profile. It signifies a never shifting attachment to the primary love-object, which is more apt to be in this instance an idea or a person. Frequently it is the former, because it is so idealized and magnified that any normal living representation of it would be less impressive than the conception which is in the patient's mind. Coupled with a Plus s, the Minus d suggests aggressive behaviour. This corresponds with the activity of the patient very well. To the onlooker he may appear even ruthless, while actually he is frantically seeking domination to bolster up his sense of inadequacy and dependency. The Plus m is another indication of his dependency, his urge to cling for emotional support.

Diffuse anxiety is indicated in several vectors. There is tension in the strong Plus h with Plus s. There is in the Minus hy a sign of inability to discharge affects, and hence indication of their piling up to create more and more tension. The Plus m means the search for love-objects because they are necessary to support the subject and therefore implies a state of unsatisfying dependency.

The restlessness and hypo-manic activity are indicated by several signs. The strong Plus h with Plus s show the existence of so much stored energy that anti-social behaviour is a possibility. (The Plus h is slightly more than 4). The Plus s alone reveals the need for aggressive behaviour.

In conjunction with Minus e, the repression or the inadequate control of hostile feelings, an unstable equilibrium is suggested, which usually is temporarily and partially balanced by explosive release of emotion from time to time. Between the outbursts increasing tension exists.

The tendency to develop compulsive habits is demonstrated in the Minus k. The appearance of a full-fledged compulsion neurosis is however improbable because of the Minus e.

Sexual adjustment is shown to be not satisfactory. The Plus h indicates feminine identification in the male. The Plus s indicates rejection of the female role by the female. Strong Plus h, especially in the presence of Plus m, suggests immaturity and a craving to be cared for. Repression operates as Minus k with Minus p to permit unconscious projection as a defensive mechanism in controlling unmodified sexual drives. The Plus h suggests that the subject's work is not satisfying and that successful sublimation is not accomplished.

In the main the Szondi profile suggests the reaction of a child. This corresponds with the clinical impression that the ulcer patient does not react as a mature adult.

It may be added that the Szondi profiles and the clinical impressions correspond essentially in each of the chronic diseases under discussion.

CHAPTER VI

COMPARISON OF SZONDI PROFILES

Since a measure of validity has been suggested in the results of the Szondi administration - by these comparisons with results obtained by other psychological and clinical methods - an interpretation of the findings is now warranted.

For the purpose of the present discussion, the groups suffering from anxiety and depression will be ignored. In each of the remaining 14 clinically differentiated groups, a record was made of the existence, to a significant degree, of strong unconscious driving forces, which, according to Deri, are the underlying causal determinants of observable behaviour.[1]

1. The need for tender love - in Arthritis, Muscle Tension, Pernicious Anaemia; Asthma, Chronic Chest, Tuberculosis; Diabetes, Obesity, Hypertension; Rheumatic Heart Disease, Thyrotoxicosis; Ulcer, Dyspepsia, Alcoholism.

2. The need to express aggression - in Hypertension; Rheumatic Heart Disease; Ulcer, Dyspepsia, Alcoholism.

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1. Deri, Susan, Introduction to the Szondi Test, New York, Grune and Stratton, 1949, p. 30.

3. The need to repress violent emotions - in Arthritis, Pernicious Anaemia; Asthma, Chronic Chest; Thyrotoxicosis; Ulcer.

4. The need to repress tender emotions - in Arthritis, Pernicious Anaemia; Rheumatic Heart Disease, Thyrotoxicosis; Dyspepsia, Alcoholism.

5. The need to repress from consciousness so-called instinctive impulses if such are unacceptable - in Arthritis, Muscle Tension; Asthma, Chronic Chest; Diabetes, Obesity, Hypertension; Rheumatic Heart Disease, Thyrotoxicosis; Ulcer, Dyspepsia, Alcoholism.

6. The need to blame forces in the environment for one's frustration - in Pernicious Anaemia; Asthma; Diabetes, Hypertension; Rheumatic Heart Disease; Alcoholism.

7. The need to own and manipulate material objects of the environment - in Arthritis, Muscle Tension; Diabetes; Alcoholism.

8. The need to cling to objects of the environment for the "moral" support and pleasure they provide.- in Muscle Tension, Pernicious Anaemia; Asthma, Chronic Chest; Thyrotoxicosis. The same need is denied issue in diabetes.

The strong desire for love and affection is present in the profiles of each of the groups. It is the only one of the basic urges (according to Lewin) that so appears. On the basis of the Szondi test it would appear that the tension arising from this need constitutes an integral part of the peculiar stress to which these patients are subject.

To substantiate such a theory several control measures were taken.

1. This personality factor does not appear to be a function of sex. A group of male patients was compared with a group of females who suffered from the same chronic diseases. There were no significant differences between their profiles.

2. This personality factor does not appear to be a function of age. A group of patients was compared with a group who suffered from the same specific chronic diseases and who were on the average at least 20 years older. There were no significant differences between their profiles.

3. This personality factor may be partly a function of culture and race, but is not to be explained on that

basis alone.

a) When a French-speaking group is compared with an English-speaking group who suffer from the same specific chronic diseases, the former show in the profiles a Plus h that is significantly stronger. (5% level of confidence).

b) When a French-speaking tuberculous group (from St. Laurent Sanatorium) is compared with an English-speaking tuberculous group (from Royal Ottawa Sanatorium), the former show in the profiles a Plus h that is significantly stronger. (5% level of confidence).

On the other hand

c) When a French-speaking group is compared with a mixed group - that is, mixed as regards the language spoken - who are controls, the former show in the profiles a Plus h that is significantly stronger. (1% level of confidence).

d) When a French-speaking group is compared with a group of French-speaking controls, the former show in the profiles a Plus h that is significantly stronger. (1% level of confidence),

e) When an English-speaking group is compared with a group of English-speaking controls, the former show in the profiles a plus h that is significantly stronger. (1% level of confidence).

f) When an English-speaking group is compared with a mixed group of controls, the former show in the profiles a Plus h that is significantly stronger. (1% level of confidence).

4. This personality factor does not appear to be a function of specific hospital environment.

a) When a mixed group of the General Hospital is compared with a mixed group of the Civic Hospital, there are no significant differences in their profiles in the Sexual Vector.

b) When a mixed group of the Civic Hospital is compared with a mixed group of the Veterans Pavilion, there are no significant differences in their profiles in the Sexual Vector.

c) When a mixed group of the General Hospital is compared with a mixed group of the Veterans Pavilion, the former show in the profiles a Plus h that is significantly stronger, (5% level), and a Plus s that is significantly weaker. (5% level). It is known that the racial composition of the groups was not identical - this may have been a contributing factor. The percentage of English-speaking patients was higher in the group from the Veterans Pavilion.

5. This personality factor does not appear to be a function of hospital environment. When a mixed group of the General Hospital is compared with a mixed group of ambulant patients attending Out-patient Clinics at the Civic Hospital, there are no significant differences in their profiles.

6. This personality factor appears to be more than a temporary manifestation. When the profiles of a mixed group at the Civic Hospital are compared with the results of a second administration of the test, given not sooner than 24 hours, there are no significant changes. None of these patients had experienced violent physical or psychic trauma during the interval, nor had suffered convulsions.

The diseases that will be studied in an effort to assess unique characteristics are - Arthritis, Asthma, Diabetes, Hypertension, Pernicious Anaemia, Rheumatic Heart Disease, Thyrotoxicosis, Tuberculosis and Peptic Ulcer.

At this time mention will be made of certain other clinical states closely related in nature, whose differentiation is at times troublesome, and which give Szondi profiles that are very similar.

They will be shown to contribute to the amplification of the theory where they reveal even more pronounced deviation from normal than do the other diseases of their group.

1. Chronic Chest Disease.

This condition is most often demonstrated in the individual who complains of a constant succession of respiratory infections, or of a mild infection persisting through the summer only to flare up each winter.

In comparison with the profiles of the asthmatic or the tuberculous, his shows a stronger Plus e, a stronger Minus hy and a stronger Minus k. This makes him a more inhibited, repressed person, suffering from a severe conscience, tense with the emotions he is unable to discharge. He is frustrated by his incapacities unless he can solve them through conversion hysteria or projection upon the community. The need for affectionate care may be not so urgently felt, and his attachment to the primary love-object not quite so strong, yet, in comparison with the controls, he would lean more on emotional support from others if such were available to him. To a significant degree he is driven by an urge to seek dependency.

2. Obesity.

This condition occurs in individuals who consume excessive quantities of food but who may not develop, as do so many of their intemperate companions, either diabetes or hypertension.

On the profile there appears a Minus e that is the strongest in the group. This means very poor control of the discharge of strong affects and an inability to cope with feelings of aggression successfully. The Plus d is the strongest of the group. This means restless ceaseless attempts to secure control of the immediate environment, and constant depression in the prospect of possible loss of power. The greater need for friends is sufficiently indicated in the tendency toward the Plus m and in the stronger leaning toward a Plus p.

On the whole, the obese subject is probably more despondent and lonely than the paranoidal diabetic or the hostile hypertensive.

3. Alcoholism.

Among the members of his group the alcoholic is the most uncomfortable in possessing both the strongest urge to express hostility and aggressiveness, and the most inhibitions about discharging it. He does have relief in some

outbursts of wrath, but control is relatively more rigid, especially considering the larger amount of latent hostility that must be kept in restraint.

He is passive in his relationships with the environment to the extent that he wishes to cling to his love-objects, even to obtain them without motor efforts on his part. This is noted from the observation that he has the strongest Minus d and strongest Plus m of the group. It is a pattern that usually indicates ethical control - since it is associated with Plus e and Minus hy. (In the alcoholic there is a Minus e in our group but it is weaker than that associated with the ulcer and dyspeptic patients). With this one can fit the notion that he does not tend toward the development of paranoidal ideas as much as the ulcer patient who has a less rigid control of his emotions.(He has a weaker Minus p than the latter).

4. Dyspepsia.

In comparison with the ulcer patient, the subject has a weaker Plus s, a weaker Minus e, a stronger Minus k, a stronger Minus d and a stronger Plus m. These singly and by combination suggest that he is less aggressive and more dependent than the latter. He has less urge to exhibit aggressive behaviour, he clings more to the friends whom he knows and he makes fewer efforts to exert himself in

mastering the forces of the environment.

It was observed in military medicine that the ulcer patient is restless, ambitious, anxious to succeed and to prove himself a leader. In the army he was, at least in the opinion of some, an excellent soldier, self-sufficient, one who often concealed his symptoms. The patient with dyspepsia was the habitue of sick-call, typically a submissive, passive person.[2]

Cathcart observed that

> . . . there is apparently no great difference between peptic ulcer and gastric neurosis, except that the latter has a more heavily-laden background of childhood conflict and neurotic traits. In addition he has increased somatic concern and awareness. The life adjustment is more faulty than in the ulcer case and the attempts to overcome the dependency urge are more feeble.[3]

These tendencies are to be observed in the Szondi profile.

5. Muscle Tension.

In comparison with the arthritic, the patient with muscle tension has an even greater desire for affection,

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2. Hasted, James A., Functional Gastrointestinal Disorders: Lessons Learned From Military Medicine in Journal of American Medical Association, Vol. 235, No. 21, issue of November 21, 1946, p. 747-751.

3. Cathcart, J.P.S., The Emotions in Gastrointestinal Disturbances in Canadian Medical Association Journal, Vol. 55, No. 5, issue of November 1946, p. 465-470.

as revealed in the stronger Plus h. Repression of instinctive urges is more rigid. As he works earnestly to secure control over the environment in order that mastery may add to his self-respect, but fear of loss of this control makes enjoyment of it impossible. Even more than the arthritic he is depressed. The weak Plus m denotes a less optimistic attitude toward life, and toward the making of interpersonal relationships that will give needed pleasure.

In comparing the complaints of two groups, only one of which had organic joint findings, Tegner found that in persons suffering from muscle spasm, the expression of the complaint was more vague. The area of discomfort was much less localized, and the illness appeared more directly in correlation with the patients' life problems.[4]

Many of them are unduly independent, excessively upright, and conscientious workers. Frustration is found to have produced grief, rage, and guilt with soreness of heart. This inward pain is displaced into outward anguish. Usually there is some decrease in the mental suffering and the patient is free to focus his attention upon his rheumatism instead of life's tensions.[5]

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4. Tegner, William, Desmond O'Neill and Ann Kaldegg, Psychogenic Rheumatism in British Medical Journal, Vol. 2, issue of July 23, 1949, p. 201-204.

5. Halliday, James L., The Concept of Psychosomatic Rheumatism in Annals of Internal Medicine, Vol. 15, No. 4, issue of October 1941, p. 666-677.

From this point on, discussion will be confined to the nine chronic diseases (as designated on page 153). In the final chapters the relationship of these five additional ones to the well differentiated types will be considered.

Some reference has been made to the comparative strength of certain needs in certain individuals. In the tables that follow each disease is compared with the others, based on the number of cards selected by the subject in each factor. Separately the relationship is given for the number of cards liked, disliked, or chosen <u>in toto</u>. The liking of a card indicates to Szondi that the need of the factor represented is accepted; disliking a card indicates that the need of the factor is not consciously accepted. The total number of cards chosen in a factor indicates somewhat roughly the degree of tension that exists in that factor, and hence its driving force.

TABLE I.- Significant differences in the number of h cards like

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	5%	1%															
Asthma	1%	5%	.														
Chest	5%	.	.	_5%													
Diabetes	5%	.	.	.	.												
Dyspepsia	.	5%	.	.	.	.											
Hypertens.	1%	5%	.	.	.	.	.										
Muscle	.	.	.	.	.	.	.	.									
Obesity	.	.	.	.	.	.	.	.	.								
P. Anaemia	1%	.	.	.	.	.	.	.	.	.							
R.H.D.	.	.	.	.	.	.	.	_5%	.	.	.						
Thyro.	.	.	.	_5%	.	.	.	_5%	.	.	_1%	.					
T.B.	1%	5%	.	.	.	.	.	.	.	.	.	.	.				
P. Ulcer	1%	.	.	.	.	.	.	.	.	.	.	1%	5%	.			
Anxiety	.	.	.	.	.	.	.	_5%	.	.	.	.	.	.	.		
Depression	1%	1%	.	.	.	.	.	.	.	.	.	.	5%	.	.	.	

If the dash is above the number, the group designated at the head of the column made fewer choices. Otherwise the group designated horizontally made fewer choices.

TABLE II.- Significant differences in the number of s cards liked

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	5%																
Arthritis	.	.															
Asthma	.	.	.														
Chest	.	.	.	.													
Diabetes	.	5%	.	.	.												
Dyspepsia	.	.	.	.	.	.											
Hypertens.	.	.	.	.	.	.	.										
Muscle	.	.	.	.	.	.	.	.									
Obesity	.	.	.	.	.	.	.	.	.								
P. Anaemia	.	.	.	.	.	.	.	.	.	.							
R.H.D.	.	.	.	.	.	5%	.	.	.	.	.						
Thyro.	.	.	.	.	.	.	.	.	.	.	.	5%					
T.B.	.	.	.	.	.	.	.	.	.	.	.	.	.				
P. Ulcer	.	.	.	.	.	1%	.	.	.	.	.	.	5%	.			
Anxiety	1%	5%	5%	.	1%	.	1%	1%	5%	1%	.	5%	5%	1%	1%		
Depression	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1%	

TABLE III.- Significant differences in the number of e cards liked

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	_5%																
Arthritis	.	.															
Asthma	.	.	.														
Chest	.	1%	1%	.													
Diabetes	.	.	1%	.	.												
Dyspepsia	.	.	.	.	_5%	.											
Hypertens.	.	.	.	.	_5%	_5%	_5%										
Muscle	.	5%	.	.	.	.	.	.									
Obesity	.	.	.	.	_5%	.	.	.	.								
P. Anaemia	.	.	.	.	_5%	.	.	.	.	.							
R.H.D.	.	5%	5%	.	.	.	.	5%	.	.	.						
Thyro.	5%	1%	1%	.	.	.	1%	1%	.	5%	1%	5%					
T.B.	.	.	.	.	_1%	_5%	.	.	.	.	.	.	_1%				
P. Ulcer	.	.	5%	.	.	.	.	.	.	.	.	.	_5%	.			
Anxiety	.	.	.	.	_5%	_5%	.	.	.	.	.	.	_1%	.	_5%		
Depression	.	.	.	.	_5%	_5%	.	.	.	.	.	.	_5%	.	.	.	

TABLE IV.- Significant differences in the number of hy cards liked

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	.	.															
Asthma	.	.	.														
Chest	.	.	.	.													
Diabetes	.	.	5%	.	1%												
Dyspepsia	.	.	.	.	.	1%											
Hypertens.	.	.	.	.	.	.	.										
Muscle	.	.	.	.	.	.	.	.									
Obesity	.	.	.	.	.	5%	.	.	.								
P. Anaemia	.	5%	.	.	.	1%	.	.	.	.							
R.H.D.	.	.	.	.	.	1%	.	.	.	.	.						
Thyro.	5%	5%	.	.	.	1%	.	.	.	.	.	.					
T.B.	5%	.	.	.	5%	.	5%	.	.	5%	1%	5%	1%				
P. Ulcer	.	.	.	.	.	1%	.	.	.	.	.	.	.	5%			
Anxiety	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		
Depression	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

TABLE V.- Significant differences in the number of k cards liked

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	.	.															
Asthma	.	.	.														
Chest	.	.	.	.													
Diabetes	.	.	.	.	.												
Dyspepsia	.	.	.	.	.	.											
Hypertension	.	.	.	.	.	.	.										
Muscle	.	.	.	.	.	.	.	.									
Obesity	.	.	.	.	.	.	.	.	.								
P. Anaemia	.	.	.	.	.	.	.	.	.	.							
R.H.D.	.	.	.	.	.	.	.	.	.	.	.						
Thyro.	.	.	.	.	.	.	.	.	.	.	.	.					
T.B.	.	.	.	.	.	.	.	.	.	.	.	5%	.				
P. Ulcer	.	.	.	.	.	.	.	.	.	.	.	.	.	.			
Anxiety	.		.	.	.	.	.	.	.	.	5%	.	.	.	.		
Depression	.	.	.	.	.	.	.	.	.	.	.	1%	.	.	.	.	

TABLE VI.- Significant differences in the number of p cards liked

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	.	.															
Asthma	_5%	.	.														
Chest	.	.	.	.													
Diabetes	_5%	.	.	.	.												
Dyspepsia	.	.	.	_5%	.	.											
Hypertens.	_5%	.	.	.	.	.	.										
Muscle	_5%	.	.	.	.	.	.	.									
Obesity	.	5%	.	5%	.	5%	.	.	5%								
P. Anaemia	_1%	.	.	.	.	.	.	.	.	_5%							
R.H.D.	_1%	.	.	.	.	.	_5%	.	.	_1%	.						
Thyro.	_5%	.	.	.	.	.	.	.	.	.	.	.					
T.B.	_1%	.	.	.	.	.	.	.	.	.	.	.	.				
P. Ulcer	_5%	.	.	.	.	.	.	.	.	_5%	.	.	.	.			
Anxiety	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		
Depression	_1%	_5%	_5%	.	_1%	.	_1%	.	.	_1%	.	.	.	_5%	.	_5%	

TABLE VII.- Significant differences in the number of d cards liked

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	1%	1%															
Asthma	.	.	.														
Chest	.	.	_1%	.													
Diabetes	1%	.	.	.	1%												
Dyspepsia	.	.	_5%	.	.	_5%											
Hypertens.	5%	.	.	.	1%	.	.										
Muscle	1%	1%	.	.	1%	.	.	.									
Obesity	5%	5%	.	.	1%	.	5%	.	.								
P. Anaemia	.	.	.	.	.	.	.	.	.	.							
R.H.D.	1%	1%	.	.	1%	.	.	.	.	.	.						
Thyro.	5%	.	.	.	1%	.	.	.	.	.	.	.					
T.B.	.	.	.	.	.	_1%	.	.	_5%	_5%	_1%	_5%	_5%				
P. Ulcer	.	.	_5%	.	.	_1%	.	_5%	_1%	_5%	_5%	_5%	_1%	.			
Anxiety	1%	5%	.	5%	1%	.	1%	.	.	.	.	.	.	1%	1%		
Depression	1%	.	.	.	1%	.	.	.	.	.	.	.	.	1%	1%	.	

TABLE VIII.- Significant differences in the number of m cards liked

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	.	.															
Asthma	.	.	.														
Chest	.	.	.	.													
Diabetes	.	_5%	_5%	_5%	_1%												
Dyspepsia	.	.	.	.	.	5%											
Hypertens.	.	_5%	_1%	_5%	_1%	.	_1%										
Muscle	.	.	.	.	.	.	.	.									
Obesity	.	.	.	.	_5%	.	.	.	.								
P. Anaemia	.	.	.	.	.	5%	.	1%	.	.							
R.H.D.	.	.	.	.	.	.	.	1%	.	.	.						
Thyro.	.	.	.	.	.	1%	.	1%	.	5%	.	.					
T.B.	.	_5%	_5%	_5%	_1%	.	_1%	.	.	.	_5%	_1%	_1%				
P. Ulcer	.	.	.	.	.	.	.	.	.	.	.	.	.	.			
Anxiety	.	.	.	.	.	1%	.	1%	.	5%	.	.	.	1%	.		
Depression	_5%	_1%	_1%	_1%	_1%	.	_1%	.	.	.	_5%	_1%	_1%	.	.	_1%	

TABLE IX.- Significant differences in the number of h cards disliked

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	.	.															
Asthma	.	.	.														
Chest	.	.	.	.													
Diabetes	.	_5%	.	.	.												
Dyspepsia	.	.	.	.	.	.											
Hypertens.	.	.	.	.	.	.	.										
Muscle	.	.	.	.	.	.	.	.									
Obesity	.	.	.	.	.	.	.	.	.								
P. Anaemia	.	_5%	.	.	.	.	.	.	.	_5%							
R.H.D.	.	.	.	.	.	.	.	5%	.	.	.						
Thyro.	.	.	.	.	.	.	.	.	.	.	1%	.					
T.B.	.	.	.	.	.	.	.	.	.	.	.	_5%	.				
P. Ulcer	.	.	.	.	.	.	.	.	.	.	.	.	.	.			
Anxiety	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		
Depression	.	_5%	.	.	.	.	.	.	.	_5%	.	_5%	.	.	.	_5%	

TABLE X.- Significant differences in the number of s cards disliked

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	.	.															
Asthma	.	.	.														
Chest	.	.	.	.													
Diabetes	.	.	.	.	.												
Dyspepsia	_5%	_1%	_5%	.	.	.											
Hypertens.	_5%	.	.	.	.	.	.										
Muscle	.	.	.	.	.	.	.	.									
Obesity	.	.	.	.	.	.	1%	.	.								
P. Anaemia	.	.	.	.	.	.	5%	.	.	.							
R.H.D.	.	.	.	.	.	.	1%	.	.	.	.						
Thyro.	.	.	.	.	.	.	.	.	.	.	.	.					
T.B.	.	.	.	.	.	.	.	.	.	.	.	.	.				
P. Ulcer	.	.	.	.	.	.	.	.	.	.	.	.	.	.			
Anxiety	1%	5%	1%	5%	1%	1%	1%	1%	1%	1%	1%	5%	1%	.	1%		
Depression	_1%	.	.	_5%	.	.	.	.	.	.	.	.	.	.	.	_1%	

TABLE XI.- Significant differences in the number of e cards disliked

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	.	1%															
Asthma	.	.	.														
Chest	5%	.	5%	.													
Diabetes	.	.	.	.	.												
Dyspepsia	.	.	.	.	.	.											
Hypertens.	.	.	.	.	.	.	.										
Muscle	.	.	.	.	.	.	.	.									
Obesity	.	.	.	.	.	.	.	.	.								
P. Anaemia	.	.	5%	.	.	.	.	.	5%	.							
R.H.D.	.	.	5%	.	.	1%	.	.	.	.	.						
Thyro.	.	.	1%	.	.	.	.	.	.	.	.	.					
T.B.	.	.	.	.	.	.	.	.	.	.	.	.	.				
P. Ulcer	.	.	.	.	.	.	.	.	.	.	5%	.	.	.			
Anxiety	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		
Depression	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

TABLE XII.- Significant differences in the number of hy cards disliked

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	.	5%															
Asthma	.	.	.														
Chest	5%	.	5%	5%													
Diabetes	.	.	.	.	_5%												
Dyspepsia	.	.	.	.	_5%	.											
Hypertens.	.	.	.	.	_5%	.	.										
Muscle	.	.	.	.	.	.	.	.									
Obesity	.	.	.	.	.	.	.	.	.								
P. Anaemia	.	.	.	.	_5%	.	.	.	.	.							
R.H.D.	.	.	.	.	_5%	.	.	.	.	.	.						
Thyro.	5%	.	.	.	.	.	.	1%	.	.	5%	.					
T.B.	.	.	_5%	.	_1%	_5%	.	.	.	.	.	.	_1%				
P. Ulcer	.	.	.	.	_5%	.	.	.	.	.	.	.	.	.			
Anxiety	.	.	.	.	_1%	.	.	.	.	.	.	.	_5%	.	.		
Depression	.	.	.	.	_5%	.	.	.	.	.	.	.	_5%	.	.	.	

TABLE XIII.- Significant differences in the number of k cards disliked

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	.	.															
Asthma	.	.	.														
Chest	.	.	.	.													
Diabetes	.	.	.	.	.												
Dyspepsia	.	.	.	.	.	.											
Hypertens.	.	.	.	.	.	.	.										
Muscle	.	.	.	.	.	.	.	.									
Obesity	.	.	.	.	.	.	.	.	.								
P. Anaemia	.	.	.	.	.	.	.	.	.	.							
R.H.D.	.	.	.	.	.	.	.	.	.	.	.						
Thyro.	.	.	.	.	.	.	.	.	.	.	.	.					
T.B.	.	.	.	.	.	.	.	.	.	.	.	.	.				
P. Ulcer	.	.	.	.	.	.	.	.	.	.	.	.	.	.			
Anxiety	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		
Depression	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

TABLE XIV.- Significant differences in the number of p cards disliked

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	.	.															
Asthma	1%	.	.														
Chest	.	.	.	.													
Diabetes	5%	.	.	.	.												
Dyspepsia	.	.	.	.	.	.											
Hypertens.	5%	.	.	.	.	.	.										
Muscle	.	.	.	.	.	.	.	.									
Obesity	.	.	.	.	.	.	.	.	.								
P. Anaemia	1%	.	.	.	5%	.	.	.	.	5%							
R.H.D.	5%	.	.	.	5%	.	.	.	.	.	5%						
Thyro.	.	.	.	.	.	.	.	.	.	.	.	.					
T.B.	.	.	.	.	.	.	.	.	.	.	.	.	.				
P. Ulcer	.	.	.	.	.	.	.	.	.	.	.	.	.	.			
Anxiety	.	.	.	_5%	.	.	.	_5%	.	.	_1%	.	.	.	_5%		
Depression	1%	.	5%	.	.	.	.	5%	.	5%	.	.	.	.	.	1%	

TABLE XV.- Significant differences in the number of d cards disliked

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	.	.															
Asthma	.	.	.														
Chest	.	_5%	.	.													
Diabetes	.	_5%	.	.	.												
Dyspepsia	.	.	1%	.	5%	5%											
Hypertens.	.	_1%	.	.	.	.	_1%										
Muscle	.	.	.	.	.	.	.	.									
Obesity	.	.	.	.	.	.	.	.	.								
P. Anaemia	.	_1%	.	.	.	.	_1%	.	.	.							
R.H.D.	_5%	_5%	.	.	.	_5%	_1%	.	.	.	.						
Thyro.	.	_5%	.	.	.	.	_1%	.	.	.	.	.					
T.B.	.	.	.	.	.	1%	.	5%	.	.	5%	1%	5%				
P. Ulcer	.	.	.	.	.	.	.	.	.	.	.	.	.	.			
Anxiety	.	_5%	.	.	.	.	_5%	.	.	.	.	.	.	_5%	.		
Depression	_5%	_1%	.	_5%	.	.	_1%	.	.	.	.	.	.	_1%	.	.	

TABLE XVI.- Significant differences in the number of m cards disliked

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	.	5%															
Asthma	.	.	.														
Chest	.	.	.	.													
Diabetes	.	5%	.	5%	1%												
Dyspepsia	.	.	.	.	.	1%											
Hypertens.	.	1%	5%	1%	1%	.	5%										
Muscle	.	.	.	.	.	5%	.	5%									
Obesity	.	.	.	.	5%	.	.	.	.								
P. Anaemia	.	.	.	.	.	5%	.	.	.	.							
R.H.D.	.	.	.	.	.	1%	.	1%	.	.	.						
Thyro.	.	.	.	.	.	1%	.	5%	.	.	.	.					
T.B.	.	5%	.	.	.	.	.	.	.	.	.	.	.				
P. Ulcer	.	.	.	.	.	.	.	.	.	.	.	.	.	.			
Anxiety	.	.	.	.	.	1%	.	1%	.	5%	.	.	.	.	.		
Depression	1%	5%	1%	1%	1%	.	1%	.	1%	.	1%	1%	1%	.	1%	1%	

TABLE XVII.- Significant differences in the total number of h cards selected

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	.	.															
Asthma	5%	.	.														
Chest	.	.	.	5%													
Diabetes	1%	.	.	.	.												
Dyspepsia	.	.	.	.	.	.											
Hypertens.	.	.	.	.	.	.	.										
Muscle	.	.	.	.	.	.	.	.									
Obesity	.	.	.	.	.	.	.	.	.								
P. Anaemia	.	.	.	.	.	.	.	.	.	.							
R.H.D.	5%	.	.	.	.	.	.	.	.	.	.						
Thyro.	.	.	.	5%	.	5%	.	.	.	.	.	.					
T.B.	5%	.	.	.	.	.	.	.	.	.	.	.	.				
P. Ulcer	1%	.	.	.	.	.	.	.	.	.	.	.	5%	.			
Anxiety	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		
Depression	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

TABLE XVIII.- Significant differences in the total number of s cards selected

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	.	.															
Asthma	.	.	.														
Chest	.	.	.	.													
Diabetes	_5%	_5%	.	_5%	.												
Dyspepsia	.	.	.	.	.	.											
Hypertens.	.	.	.	.	.	5%	.										
Muscle	.	.	.	.	.	.	.	.									
Obesity	.	.	.	.	.	5%	.	.	.	.							
P. Anaemia	.	_5%	.	.	.	5%	.	.	.	.							
R.H.D.	.	.	.	.	.	1%	5%	.	.	.	.						
Thyro.	.	_5%	.	.	.	.	.	.	.	.	.	.					
T.B.	.	_5%	.	.	.	1%	.	.	.	.	.	.	.				
P. Ulcer	.	_5%	.	.	.	.	.	.	.	.	.	.	.	.			
Anxiety	.	.	.	.	.	1%	.	.	.	.	.	.	.	.	.		
Depression	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

TABLE XIX.- Significant differences in the total number of e cards selected

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	_5%																
Arthritis	.	1%‾															
Asthma	.	.	.														
Chest	.	5%‾	.	.													
Diabetes	5%‾	.	5%‾	.	.												
Dyspepsia	.	.	.	.	.	.											
Hypertens.	.	.	.	.	.	.	.										
Muscle	.	5%‾	.	.	.	.	.	.									
Obesity	.	.	.	.	.	.	.	.	.								
P. Anaemia	.	.	.	.	.	_1%	.	.	_5%	.							
R.H.D.	.	.	.	.	.	_1%	.	.	.	.	.						
Thyro.	.	5%‾	.	.	.	.	.	5%‾	.	.	5%‾	5%‾					
T.B.	.	.	.	.	.	.	.	.	.	.	.	.	.				
P. Ulcer	.	.	.	.	.	_5%	.	.	.	.	.	.	.	.			
Anxiety	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		
Depression	.	.	.	.	.	_5%	.	.	.	.	.	.	_5%	.	.	.	

TABLE XX.- Significant differences in the total number of hy cards selected

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	.	.															
Asthma	.	.	.														
Chest	.	.	.	.													
Diabetes	.	.	.	.	.												
Dyspepsia	.	.	.	.	_5%	_5%											
Hypertens.	.	.	.	.	.	.	.										
Muscle	.	.	.	.	.	.	.	.									
Obesity	.	.	.	.	_5%	.	.	.	.								
P. Anaemia	.	.	.	.	.	.	.	.	.	.							
R.H.D.	.	.	.	.	_1%	_5%	.	.	.	.	.						
Thyro.	.	.	.	.	.	.	.	.	.	.	.	.					
T.B.	.	.	.	.	.	.	.	.	.	.	.	.	.				
P. Ulcer	.	.	.	.	_5%	_5%	.	.	.	.	.	.	.	.			
Anxiety	.	.	.	.	_5%	.	.	.	.	.	.	.	.	.	.		
Depression	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

TABLE XXI.- Significant differences in the total number of k cards selected

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	.	.															
Asthma	.	.	.														
Chest	.	.	.	.													
Diabetes	.	.	.	.	.												
Dyspepsia	.	.	.	.	.	.											
Hypertens.	.	.	.	.	.	.	.										
Muscle	.	.	.	.	.	.	.	.									
Obesity	.	.	.	.	.	.	.	.	.								
P. Anaemia	.	.	.	.	.	.	.	.	.	.							
R.H.D.	.	.	.	.	.	.	.	.	.	.	.						
Thyro.	.	.	.	.	.	.	.	.	.	.	.	.					
T.B.	.	.	.	.	.	.	.	.	.	.	.	.	.				
P. Ulcer	.	.	.	.	.5%	.	.	.	.	.	.	.	.	.			
Anxiety	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		
Depression	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

TABLE XXII.- Significant differences in the total number of p cards selected

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	.	.															
Asthma	.	.	.														
Chest	.	.	.	.													
Diabetes	_1%	.	.	.	.												
Dyspepsia	.	.	.	.	.	.											
Hypertens.	.	.	.	.	.	.	.										
Muscle	.	.	.	.	.	.	.	.									
Obesity	.	.	.	.	.	.	.	.	.								
P. Anaemia	.	.	.	.	1%	5%	.	.	5%	.							
R.H.D.	.	.	.	.	.	.	.	.	.	.	_5%						
Thyro.	.	.	.	.	.	.	.	.	.	.	.	.					
T.B.	.	.	.	.	.	.	.	.	.	.	.	.	.				
P. Ulcer	.	.	.	.	.	.	.	.	.	.	.	.	.	.			
Anxiety	.	.	.	.	.	.	.	.	.	.	_5%	.	.	.	.		
Depression	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

TABLE XXIII.- Significant differences in the total number of d cards selected

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	.	5%															
Asthma	.	.	.														
Chest	.	.	5%	.													
Diabetes	.	.	.	.	5%												
Dyspepsia	1%	.	.	.	.	.											
Hypertens.	.	.	.	.	.	.	.										
Muscle	.	.	.	.	1%	.	.	.									
Obesity	.	.	.	.	1%	.	.	.	.								
P. Anaemia	.	.	.	.	.	.	.	.	.	.							
R.H.D.	.	.	.	.	.	.	.	.	.	.	.						
Thyrc.	.	.	.	.	5%	.	.	.	.	.	.	.					
T.B.	.	.	.	.	.	.	.	.	.	.	.	.	.				
P. Ulcer	.	.	.	.	.	.	.	.	5%	.	.	.	.	.			
Anxiety	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5%		
Depression	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

TABLE XXIV.- Significant differences in the total number of m cards selected

	C	Al	Ar	As	Ch	Di	Dy	Hy	MT	Ob	PA	RHD	Th	TB	PU	An	De
Controls																	
Alcoholism	.																
Arthritis	.	.															
Asthma	.	.	.														
Chest	.	.	.	.													
Diabetes	.	.	.	.	.												
Dyspepsia	.	.	.	.	.	.											
Hypertens.	.	.	.	.	.	.	.										
Muscle	.	.	.	.	.	.	.	.									
Obesity	.	.	.	.	.	.	.	.	.								
P. Anaemia	.	.	.	.	.	.	.	.	.	.							
R.H.D.	.	.	.	.	.	.	.	.	.	.	.						
Thyro.	.	5%	.	.	.	.	.	.	5%	5%	.	.					
T.B.	.	.	.	.	.	.	.	.	.	.	.	.	.				
P. Ulcer	.	.	.	.	.	.	.	.	.	.	.	.	.	.			
Anxiety	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		
Depression	.	.	.	.	.	.	.	.	5%	.	.	.	.	.	.	.	

TABLE XXV.- Comparison of each clinical group with the Controls in the number of choices in the h, s, e, and hy factors

Plus h	Plus s	Plus e	Minus hy
1. Asthma 1%	Alcoholism 5%	Thyro. 5%	C.Chest 5%
2. P.Ulcer 1%	P. Ulcer	C.Chest	Thyro. 5%
3. Depression 1%	R.H.D.	Asthma	P. Ulcer
4. T.B. 1%	Hypertension	R.H.D.	R.H.D.
5. Hypertension 1%	Dyspepsia	Controls	P. Anaemia
6. P. Anaemia 1%	Depression		Diabetes
7. Diabetes 5%	Controls	Minus e	Alcoholism
8. Muscle T.	Obesity	1. Arthritis	Arthritis
9. Dyspepsia	Arthritis	2. P. Ulcer	Asthma
10. Arthritis 5%	T.B.	3. Depression	Dyspepsia
11. Obesity	C.Chest	4. Muscle T.	Controls
12. C.Chest 5%	P. Anaemia	5. Obesity	Anxiety
13. R.H.D.	Muscle T.	6. Anxiety	Hypertension
14. Anxiety	Asthma	7. Hypertension	Muscle T.
15. Thyro.	Thyro.	8. Diabetes	Depression
16. Alcoholism	Diabetes	9. T.B.	T.B.
17. Controls		10. Dyspepsia	Obesity
	Minus s	11. Controls	
	1. Anxiety	12. P. Anaemia	
		13. Alcoholism	

TABLE XXVI.- Comparison of each clinical group with the Controls in the number of choices in the k, p, d, and m factors

Minus k	Minus p	Plus d	Plus m
1. R.H.D.	P. Anaemia 1%	Anxiety 1%	Alcoholism
2. Dyspepsia	Depression 1%	Muscle T. 1%	Dyspepsia
3. Muscle T.	Asthma 1%	Obesity 5%	Asthma
4. Hypertension	R.H.D. 5%	Diabetes 1%	Anxiety
5. C. Chest	P.Ulcer	Hypertension 5%	C.Chest
6. Alcoholism	Hypertension 5%	Arthritis 1%	Thyro.
7. Thyro.	Arthritis	Depression 1%	P.Ulcer
8. P. Anaemia	Muscle T.	R.H.D. 1%	P. Anaemia
9. Arthritis	Thyro.	P. Anaemia	R.H.D.
10. Asthma	T.B.	Thyro. 5%	Arthritis
11. Diabetes	Diabetes 5%	Controls	Controls
12. Anxiety	Alcoholism		Muscle T.
13. Controls	Dyspepsia	Minus d 1. Alcoholism	
14. Obesity	Anxiety	2. Dyspepsia	Minus m 1. Depression 5%
15. T.B.	C.Chest	3. T.B.	2. Hypertension
16. P.Ulcer	Obesity	4. Controls	3. Diabetes
17. Depression	Controls	5. P.Ulcer	4. Obesity
		6. Asthma	5. T.B.
		7. C.Chest	6. Controls

CHAPTER VII

PHYSICAL FACTORS IN CHRONIC DISEASE

Clinicians have observed a family history of a specific or of general chronic disease. For example, Barber found in one family hereditary gout on both sides, arthritis in the maternal grandmother, gout in the father, urticaria in the mother, rheumatic fever and psosiasis in one daughter, and tuberculosis in one son.[1] One group of arthritics gave a family history of arthritis in nearly 25%, of hypertension in more than 50%, and diabetes in 9 per cent.[2]

Some patients refuse treatment for co-incident psoriasis because, when it is relieved, the arthritic discomfort is more severe.[3]

Dunbar found that almost one half had suffered pneumonia, pleurisy or severe bronchitis; one seventh had allergies, especially asthma; almost one half had gastro-intestinal disorders, and 12% had hypertension.[4]

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1. Barber, H.W., Discussion on the Skin Manifestations in Rheumatism in Proceedings of the Royal Society of Medicine, Vol. 31, issue of January 21, 1938, p. 701-716.

2. Dunbar, Flanders, Psychosomatic Diagnosis, New York, Paul B. Hoeber, 1948, p. 373.

3. Barber, H.W., Discussion on the Skin Manifestations in Rheumatism, p. 708.

4. Dunbar, Flanders, Psychosomatic Diagnosis, p. 376.

Halliday cites the example of an arthritic, a middle-aged man, developing for the first time widespread resistant dermatitis soon after a personal disaster.[5]

Hench reports a group of 231 with psoriasis, 32% of whom also had arthritis. In 14 persons onset of the two diseases was simultaneous.[6]

Thomas saw one patient, a girl of 11 years of age, who had suffered urticaria for 11 months before admission to hospital for arthritis.[7]

Asthma.

Among Dunbar's asthmatic patients who came for analysis one was afflicted with urticaria and eczema, as well as mild rheumatic symptoms.[8]

Gillespie describes an asthmatic spinster, who complained in addition of eczema, prurigo, and alopecia.[9]

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5. Halliday, J.L., Psychosomatic Medicine and the Rheumatism Problem in Practitioner, Vol. 152, No. 907, issue January 1944, p. 6-15.

6. Hench, Philip S., and others, The Problem of Rheumatism and Arthritis in Annals of Internal Medicine, Vol. 12, No. 7, issue of January 1939, p. 1319.

7. Thomas, Giles W., Psychic Factors in Rheumatoid Arthritis in American Journal of Psychiatry, Vol. 93, No. 3, issue of November 1936, p. 693-710.

8. Dunbar, H. Flanders, Psychoanalytic Notes Relating to Syndromes of Asthma and Hayfever in Psychoanalytic Quarterly, Vol. 7, No. 1, issue of January 1938, p. 25-68.

9. Gillespie, R.D., Psychological Aspects of Skin Diseases in British Journal of Dermatology, Vol. 50, No. 1, issue of January 1938, p. 1-16.

In each of 5 cases who presented themselves to Hall, there was a history of family allergy. In 4 there were recurrent colds.[10]

On the basis of his experience Metzger advises the allergist to look for cardiac conditions, infections, blood dyscrasias and trauma.[11]

Pearson frequently obtained from his patients a family history of allergy, and a personal history of associated forms of allergy.[12]

Rogerson found that in some children the asthma alternated with eczema.[13]

Stokes describes an "eczema-asthma temperament" to which is often added rosacea.[14]

Diabetes.

Nearly one third of one group of diabetics gave a

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10. Hall, Muriel Barton, Asthma in Childhood in British Medical Journal, Vol. 2, issue of July 27, 1940, p.110-13.

11. Metzger, Frank C., Emotions in the Allergic Individual in American Journal of Psychiatry, Vol. 103, No. 5, issue of March, 1947, p. 697-99.

12. Pearson, R.S. Bruce, The Management of Asthma in British Medical Journal, Vol. 1, issue of June 3, 1950, p. 1311-14.

13. Rogerson, C.H., Role of Psychotherapy in the Treatment of Asthma-eczema-prurigo Complex in Children in British Journal of Dermatology, Vol. 46, No. 9, issue of September. 1934, p. 368-78.

14. Stokes, John H., The Personality Factor in Psychoneurogenous Reactions of the Skin in Archives of Dermatology and Syphilology, Vol. 42, No. 5, issue of November, 1940, p. 752-60.

history of diabetes in the family, and 22% a history of cardiovascular disease.[15] Fifteen per cent of the patients had hypertension, and a high percent had had a cardiac neurosis earlier in life.

Daniels quotes an estimate that hyperthyroidism exists in 1.68% of diabetics, and diabetes in 2.3% of hyperthyroidism.[16]

Ishigami points out the sub-normal resistance of the diabetic to tuberculosis and furunculosis.[17]

Hypertension.

About half of one group of hypertensive patients gave a history of family cardiovascular disease; in half of these the history was of hypertensive heart disease.[18] There was a family history of diabetes in 19%. Half of the patients had had pneumonia or pleurisy. Constipation was present in

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15. Dunbar, Flanders, Psychosomatic Diagnosis, p.484-6.

16. Daniels, George E., The Role of Emotion in the Onset and Course of Diabetes in Psychosomatic Medicine, Vol.10, No. 5, issue of September 1948, p. 288-290.

17. Ishigami, Tohru, Influence of Psychic Acts on the Progress of Pulmonary Tuberculosis in American Review of Tuberculosis, Vol. 2, No. 8, issue of October 1918, p. 470-484.

18. Dunbar, Flanders, Psychosomatic Diagnosis, p. 252-254.

more than half. One sixth of the cases reported allergy. More than half were definitely over-weight.

Barach found a hereditary tendency to the disease in 50% of 231 cases.[19] In the females he noted frequent enlargement of the thyroid and changes in the skin. There was a tendency to leukopenia with a relative lymphocytosis.

Katz observed that one of the diseases productive of hypertension was periarteritis nodosa.[20]

In young males Leblond discovered that almost all early had had allergic or pulmonary affections.[21]

Robbins reports the case of a young woman, in whom bilateral sympathectomy reduced neither her hypertension nor her headaches, who also suffered from a duodenal ulcer.[22]

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19. Barach, Joseph H., The Constitutional Factors in Hypertensive Disease in Journal of American Medical Association, Vol. 91, No. 20, issue of November 17, 1928, p. 1511-1514.

20. Katz, L.N., and Louis Leiter, Present Conception of "Essential" Hypertension in Psychosomatic Medicine, Vol. 1, No. 1, issue of January 1939, p. 101-117.

21. Leblond, S., and V. Voyer, Clinical and Psychiatric Study of Hypertension in Laval Medicine, Vol.11, No. 3, issue of March 1946, p. 393-95.

22. Robbins, Lewis L., Psychological Factors in Essential Hypertension in Bulletin of the Menninger Clinic, Vol. 12, No. 6, issue of November 1948, p. 195-202.

Rheumatic Heart Disease.

In one group of patients, 44% gave a family history of rheumatism or cardiovascular disease, and 20% one of diabetes.[23] The most frequent illnesses in the patients were upper respiratory infections, gastro-intestinal disorders, migraine and allergies. Fifteen per cent suffered from hypertension.

Griffith commented on the fact that much more urticaria occurred among these individuals than would be expected by chance.[24]

Hench reported a series of 500 cases with skin purpura. Of these 7 had rheumatic fever and 21 had rheumatoid arthritis.[25]

Of 523 patients 181 had skin eruptions, according to Keil. These included urticaria and psoriasis.[26]

Rittwager found that allergies were three times as common in a group with rheumatic fever than in a non-

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23. Dunbar, Flanders, Psychosomatic Diagnosis, p. 416-417.

24. Griffith, George C., and Alexander D. Campbell, Skin Manifestations of Rheumatic Fever in American Practitioner, Vol. 2, No. 9, issue of May 1948, p. 622-624.

25. Hench, Philip S., and others, Rheumatism and Arthritis, Part 2, in Annals of Internal Medicine, Vol. 28, No. 2, issue of February 1948, p. 309-451.

26. Keil, Harry, The Rheumatic Erythemas: a Critical Survey in Annals of Internal Medicine, Vol. 11, No. 12, issue of June 1938, p. 2223-2268.

rheumatic group.[27] The allergies in order were hay fever, food allergies, vasomotor rhinitis, and bronchial asthma.

Thyrotoxicosis.

After considering 5000 cases, Bram reported that in 2% the patients had suffered infections such as influenza, pneumonia and tuberculosis previous to onset of the hyperthyroidism.[28]

Lidz found in a patient who came for psycho-analysis thyrotoxicosis, diabetes and hypertension.[29]

A patient of Newburgh's also had diabetes. Both the diabetes and the elevated basal metabolism disappeared after the analysis.[30]

Prior observed that the existence of thyrotoxicosis might stir into activity tuberculosis.[31]

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27. Rittwager, Marjorie, and Francis J. Romano, A Study of the Incidence of Allergy in Children with Rheumatic Fever in Archives of Pediatrics, Vol. 63, No. 12, issue of December 1946, p. 639-43.

28. Bram Israel, Psychic Trauma in the Etiology of Graves' Disease in American Journal of Psychiatry, Vol. 92, No. 5, issue of March 1936, p. 1077-1094.

29. Lidz, Theodore, Emotional Factors in the Etiology of Hyperthyroidism in Psychosomatic Medicine, Vol. 11, No. 1, issue of January 1949, p. 2-8.

30. Newburgh, L.H., and C.D. Camp, The Influence of Anxiety States on the Thyroid Gland in Annals of Clinical Medicine, Vol. 4, No. 12, issue of June 1926, p. 1006-11.

31. Prior, Guy P.U., Some Mental Cases with Endocrine Considerations in Journal of Mental Science, Vol. 66, No. 272, issue of January 1920, p. 23-46.

Wallace found that in 23.7% of 440 cases tonsillitis, influenza and rheumatism were rather frequent antecedents.[32]

Tuberculosis.

Coleman noted that in a 43 year old single female patient a skin eruption of herpes zoster broke out at a disturbing point in her analysis.[33]

Hartz reported the case of a young man who was not on the best of terms with his mother-in-law. When she moved into his house, they were not happy. She developed diabetes and hypertension, and he developed tuberculosis.[34]

Peptic Ulcer.

In the families of ulcer patients, Draper found a history of tuberculosis in 37%, asthma in 25%, and diabetes in six per cent.[35] The mothers showed a weakness of the gastro-intestinal tract twice as aften as the fathers. The males of these families were less resistant to tuberculosis and pneumonia than the females.

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32. Wallace, H.L., Hyperthyreoidism: a Statistical Presentation of the Symptomatology in Edinburgh Medical Journal, Vol. 38, No. 10, issue of October 1931, p. 578-589.

33. Coleman, Jules V., Allan Hune, and James S. Whedbee, Tuberculosis and Dependency in Psychosomatic Medicine, Vol. 12, No. 3, issue of May .950, p. 189-198.

34. Hartz, Jerome, Tuberculosis and Personality Conflicts in Psychosomatic Medicine, Vol. 6, No. 1, issue of January 1944, p. 17-22.

35. Draper, George, and Grace Allen Touraine, The Man-environment Unit and Peptic Ulcer in Archives of Internal Medicine, Vol. 49, No. 4, issue of April 193[illegible], p. 616-662.

In 822 cases of hypertension and of ulcer, Moschcowitz found that the two diseases co-existed in 8.9%.[36] In 577 cases of thyrtoxicosis and of ulcer, both diseases existed simultaneously in 6.4%. In 993 cases of hypertension and of thyrotoxicosis, both diseases existed simultaneously in 17.2%.

Summary.

Two tendencies would seem apparent. First, in the patients suffering any one of these chronic diseases there is the co-existence, at least for a time, of a second chronic illness, or the substitution of a second chronic illness - in a relatively large number of instances. Second, in the families of these patients there is a history of the same chronic disease or of other chronic diseases - in a relatively large number of instances.

It will be of interest to note whether or not the prodromal and early symptoms of these diseases are similar.

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36. Moschcowitz, Eli, Disorders and Personality in New York State Journal of Medicine, Vol. 48, No. 8, issue of August 1948, p. 1375-1403.

The early signs of which the patient gives evidence and the first symptoms of which he complains will be noted.

Arthritis.

Instability of the autonomic nervous system exists, with abnormalities in the skin's blood supply and sweat secretion.[1] In a prodromal stage of the disease there may be only coldness of the skin of the extremities and a tendency to chilblains. When the disease is active sweating persists.

There is a hereditary factor. In one group a history of family rheumatic disease was given in about 25% of cases, and in over 30% if the patients' siblings were included in the estimation.[2]

Booth[3] found that on the average the patients were

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1. Barber, H.W., Discussion on the Skin Manifestations in Rheumatism in Proceedings of the Royal Society of Medicine, Vol. 31, issue of January 21, 1938, p. 701-716.

2. Dunbar, Flanders, Psychosomatic Diagnosis, New York, Paul B. Hoefer, 1943, p. 373.

3. Booth, Gotthard Cohen, Personality and Chronic Arthritis in Journal of Nervous and Mental Disease, Vol. 85, No. 6, issue of June 1937, p. 637-661.

of low general vitality, with an incapacity to respond normally to temperature changes.

In the early stages it appears to be reversible.[4]

The first complaints of many are of general debility, weakness, vague pains, tachycardia, numbness in the arms, and pins and needles in the fingers. There may be anaemia, visceroptosis, and endocrine dysfunction.[5] At times there is insomnia, lack of appetite and abdominal discomfort.[6]

Ropes comments on the prodromal fatiguability and weight loss.[7]

Asthma.

Often there is abnormality of function of the sympathetic nervous system, with disturbance of the activity of the vagus and consequent vagotonia.[8]

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4. Cobb, Stanley, and Henry H.W. Miles, Psychiatric Conference in American Practitioner, Vol. 3, No. 7, issue of March 1949, p. 407-411.

5. Halliday, J.L., The Psychological Approach to Rheumatism in Proceedings of the Royal Society of Medicine, Vol. 31, issue of November 19, 1938, p. 167-178.

6. --------, Psychological Factors in Rheumatism in British Medical Journal, Vol. 1, issue of January 30, 1937, p. 213-217.

7. Ropes, Marian W., and Walter Bauer, Rheumatoid Arthritis; its Varied Clinical Manifestations in New England Journal of Medicine, Vol. 233, No. 20, issue of November 15, 1945, p. 592-596.

8. Christian, Henry A., The Principles and Practice of Medicine, 15th ed., New York, D. Appleton-Century, 1944, p. 816.

Evidence of heredity is present in a considerable proportion.[9]

It may be preceded by complaints of fatigue and physical exhaustion.[10]

Detweiler emphasizes the signs of autonomic imbalance - the cold clammy hands, mottled skin, excess sweating, tachycardia, low blood pressure, and gastro-intestinal irregularities.[11]

There may be accompanying endocrine influences - during the menses or the menopause.[12]

Complaints are usually multiple, commonly including insomnia, infections, and signs of general malnutrition.[13] There may be also unexplained remissions, lasting weeks or years.

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9. Christian, Henry A., The Principles and Practice of Medicine, p. 815.

10. Abramson, Harold A., Psychosomatic Aspects of Hay Fever and Asthma in Annals of Allergy, Vol. 6, No. 2, issue of March 1948, p. 110-121.

11. Detweiler, H.K., The Psychogenic Factor in Asthma in Canadian Medical Association Journal, Vol. 62, No. 2, issue of February 1950, p. 128-130.

12. Henderson, A.T., Psychogenic Factors in Bronchial Asthma in Canadian Medical Association Journal, Vol. 55, No. 2, issue of August 1946, p. 106-111.

13. --------, Progress in Allergy in Annals of Allergy, Vol. 6, No. 2, issue of March, 1948, p. 159-170.

Diabetes.

In patients presenting at the Peter Bent Brigham Hospital, the more frequent symptoms are urinary frequency, thirst, weakness, loss of weight, rheumatic pains, numbness in the extremities, digestive disturbances, skin lesions, shortness of breath, tachycardia and dizziness.[14]

There appears to be a hereditary factor. Evidence also exists that the so-called juvenile and the adult type behave genetically as forms of a single graded character rather than two distinct entities.[15] Where inheritance was studied in 1380 patients of random choice, the per cent of those with positive family histories varied inversely with the age of onset. The time of the latter was latest for diabetics with negative family histories, and earliest for those with bilateral positive family histories.

Dunbar notes the complaints of pain around the heart, headache, muscle tension and menstrual irregularities.[16]

Menninger is impressed by physical laziness, increas-

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14. Christian, Henry A., The Principles and Practice of Medicine, p. 588.

15. Thompson, Margaret W., Lillian E. Laakso and F.A. Watson, Studies of the Inheritance of Diabetes Mellitus in Canadian Medical Association Journal, Vol. 63, No. 6, issue of December 1950, p. 556-559.

16. Dunbar, H. Flanders, The Refractory Patient with Diabetes in Journal of Nervous and Mental Disease, Vol. 86, No. 6, issue of December 1937, p. 712-713.

ed appetite and increased desire to sleep.[17]

Hypertension.

There are a significant number of vasomotor symptoms. Headache, vertigo, feelings of fulness in the head and flushing are common.[18]

Heredity is prominent in aetiology. The children of two hypertensive parents have higher blood pressures than average, and a 47% chance of developing essential hypertension in later life.[19]

Early complaints are referred to all parts of the body. They include blushing, cold hands, nosebleeds, abnormal menstruation, migraine, fainting, a decreased tolerance for carbohydrates, and great variability of blood pressure readings.[20] Their sleep may be disturbed.[21]

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17. Menninger, William C., The Inter-relationships of Mental Disorders and Diabetes Mellitus in Journal of Mental Science, Vol. 81, No. 333, issue of April 1935, p. 332-57.

18. Christian, Henry A., The Principles and Practice of Medicine, p. 1127.

19. Smirk, F.H., Pathogenesis of Essential Hypertension in British Medical Journal, issue of May 7, 1949, p. 791-797.

20. Ayman, David, and Joseph H. Pratt, Nature of the Symptoms Associated with Essential Hypertension in Archives of Internal Medicine, Vol. 47, No. 5, issue of May 1931, p. 675-687.

21. Ayman, David, The Early Diagnosis and Early Treatment of Arteriolar (Essential) Hypertension in New England Journal of Medicine, Vol. 205, No. 9, issue of August 27, p. 424-430.

Barach finds in addition abnormal fatiguability, a tendency to leukopenia with a relative lymphocytosis, and a low basal metabolic rate.[22]

There is in young females especially easily provoked blushing over the face and neck, tachycardia and increased salivation.[23]

Dunbar notes the tenseness in skeletal and smooth muscle, dyspnea and palpitation.[24]

Some patients complain of polyuria and nocturia, headache on awakening sometimes accompanied with nausea and vomiting, unusual fatigue after physical exertion, neuralgia and muscle pains, diarrhoea, and may have anaemia.[25] There may be buzzing in the ears, or a sudden giving out of the legs.

Pernicious Anaemia.

A definite familial tendency exists. The disease

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22. Barach, Joseph H., The Constitutional Factors in Hypertensive Disease in Journal of American Medical Association, Vol. 91, No. 20, issue of November 17, 1928, p.1511-1514.

23. Corcoran, A.C., and Irvine H. Page, Arterial Hypertension, in Journal of American Medical Association, Vol. 116, No. 8, issue of February 22, 1941, p. 690-694.

24. Dunbar, Flanders, Character and Symptom Formation in Psychoanalytic Quarterly, Vol. 8, No. 1, issue of January 1939, p. 18-47.

25. Janeway, Theodore C., A Clinical Study of Hypertensive Cardiovascular Disease in Archives of Internal Medicine, Vol. 12, No. 6, issue of December 1913, p. 755-98.

develops so insidiously that patients find it difficult to fix a date of the first sensations of fatigue. The indisposition to exertion increases with faintness or breathlessness in attempting it.[26] Appetite fails. Palpitation and tachycardia occur. The skin of the whole body appears smooth, pale and waxy.

There is an increased desire to sleep. Paraesthesias persist, flatulence, diarrhoea and vague visceral sensations.[27]

Rheumatic Heart Disease.

The existence of a hereditary factor is confirmed by a controlled study in which it would appear that the disease occurs more commonly in the distant relatives of the patients than in those of the controls.[28] It affected both members of two pairs of identical twins, and only one of the members in two sets of fraternal twins.

The earliest and most prominent symptoms are severe

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26. Christian, Henry A., The Principles and Practice of Medicine, p. 949-950.

27. Woltman, Henry W., The Mental Changes Associated with Pernicious Anemia in American Journal of Psychiatry, Vol. 80, No. 1, issue of January 1924, p. 435-449.

28. Irvine-Jones, E., Acute Rheumatism as a Familial Disease in American Journal of Diseases of Children, Vol. 45, 1933, p. 1184. Abstract in Canadian Medical Association Journal, Vol. 31, No. 2, issue of August 1934, p.222

dyspnea, palpitation and fatigue.[29] Accompanying these may be upper respiratory complaints, migraine, gastro-intestinal disorders and allergies. Pelvic disorders are more numerous than in any other group studied with the exception of the diabetics.

Restless sleep is characteristic.[30]

Thyrotoxicosis.

A family predisposition may exist and several members may be affected.[31] It has been suggested that there is a distinct pathological tendency that may remain quiescent until precipitating factors stir it into activity.

Weakness is common, particularly a feeling of the giving way of the legs. Attacks of vomiting and diarrhoea may occur. There are pigmentary changes in the skin and in some cases the development of scleroderma. There is tachycardia and complaints of throbbing in the arteries, often with flushes of heat and profuse perspiration. A widespread erythema may exist. The blood pressure varies;

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29. Dunbar, Flanders, Psychosomatic Diagnosis, p.416-7.

30. Christian, Henry A., The Principles and Practice of Medicine, p. 101.

31. --------, The Principles and Practice of Medicine, p. 1168-1170.

there may be early hypertension followed by hypotension. In some cases hypertension returns after a time. Sleep is often impaired. Disturbances of the menstrual function often exist. Anaemia and emaciation may develop.

Bram notes the possible demonstration of dermographia in some patients.[32]

The skin is pale, soft and moist; the extremities are cold and cyanosed.[33] There is frequent headache and dizziness. Weight loss may develop.

Hyperaesthesia and hyperacusis can sometimes be observed.[34]

There may be anorexia, dyspnea, palpitation and an occasional attack of pain around the heart.[35]

Tuberculosis

Ross calls attention to the signs of vasomotor instability, the easy fatiguability, the prevalence of

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32. Bram, Israel, Psychic Trauma in Pathogenesis of Exophthalmic Goitre in Endocrinology, Vol. 11, No. 2, issue of March 1927, p. 106-116.

33. Johnson, W., Symptoms of Hyperthyroidism Observed in Exhausted Soldiers in British Medical Journal, Vol. 1, issue of March 22, 1919, p. 335-337.

34. Kiene, H.E., and H.H. Dixon, A Study of Psychogenic Factors in Thyrotoxicosis in Journal of Nervous and Mental Disease, Vol. 74, No. 4, issue of October 1931, p. 483-493.

35. Moschcowitz, Eli, and Solon S. Bernstein, The Relation of Neurocirculatory Asthenia to Graves' Disease in American Heart Journal, Vol. 28, No. 2, issue of August 1944, p. 177-198.

digestive disorders.[36]

In a series of 902 cases, on admission to hospital, the complaints included weakness and fatigue in 467, pain in the chest in 357, anorexia constipation or diarrhoea in 19?, dyspnea in 132, loss of weight in 109, and sweating, headache, insomnia and abdominal disturbances.[37]

Hypertension may precede the tuberculosis and excite complaints.[38]

Menstrual disturbances are common both early in the course of the disease and in advanced stages.[39]

Peptic Ulcer.

There may be an ulcer constitution because certain families seem to be particularly susceptible, four or five times as many cases occurring as would be expected on the average.[40] In association are migraine, hypertension and

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36. Ross, C.B., and W.S. Stanbury, The Psychology of Tuberculosis in American Review of Tuberculosis, Vol. 28, No. 2, issue of August 1933, p. 217-228.

37. Molony, I.C., A Study of 1000 Cases of Adult Tuberculosis and its Bearing on Diagnosis in American Review of Tuberculosis, Vol. 19, No. 1, issue of January 1929, p. 99-113.

38. Service, W.C., Insomnia in Tuberculosis in American Review of Tuberculosis, Vol. 23, No. 4, issue of April 1931, p. 440-455.

39. Christian, Henry A., The Principles and Practice of Medicine, p. 235.

40. Halliday, James L., Psychosocial Medicine, New York, Norton, 1948, p. 57.

fibrositis.

Constitutional asthenia of the vegetative nervous system exists, with symptoms in the gastro-intestinal tract which may temporarily change to another body system.[41]

The patients are vagotonic, characteristically having cold and clammy hands, spastic constipation, exaggerated reflexes, hyperacidity and vasomotor instabilities.[42]

Tachycardia is frequent.[43] There may be anemia.[44] Sexual maladjustments are common.[45] There is loss of weight from the prolonged dyspepsia.[46]

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41. Friedenwald, J., The Human Constitution in its Relation to Gastro-intestinal Disorders in Journal of American Medical Association, Vol. 95, No. 13, issue of September 27, 1930, p. 905-910.

42. Draper, George, The Emotional Component of the Ulcer Susceptible Constitution in Annals of Internal Medicine, Vol. 16, No. 4, issue of April 1942, p. 633-658.

43. Crohn, Burrill B., Gastroduodenal Ulcer in New England Journal of Medicine, Vol. 218, No. 4, issue of January 27, 1938, p. 148-156.

44. Christian, Henry A., The Principles and Practice of Medicine, p. 659.

45. Klein, Henriette R., A Personality Study of One Hundred Unselected Patients Attending a Gastrointestinal Clinic in American Journal of Psychiatry, Vol. 104, No. 7, issue of January 1948, p. 433-439.

46. Christian, Henry A., The Principles and Practice of Medicine, p. 659.

Summary.

A relatively large number of symptoms and signs are found to be common to the early and active stages of these chronic diseases. Regardless of the body system most affected in any one of them, symptoms develop in one or more other body systems. Inasmuch as many of these symptoms and signs are to be found in the psychoneurotic states, it would seem pertinent to inquire if these diseases are believed to be psychogenic in any significant degree.

CHAPTER VIII

PSYCHOLOGICAL FACTORS IN CHRONIC DISEASE

It is gradually being recognized that the emotions have something to do with Arthritis. The lay view is that, if a person develops such a painful and crippling disease, it is no wonder he is nervous. The opposite point of view is that Arthritis is largely due to a response to certain strong emotional influences which arise within the individual and influence the function of the joints. The middle of the road is travelled by those, such as Weiss and English, who feel that many factors are at work, of which the psychic factor is only one.[1] It is sometimes important, sometimes unimportant.

Halliday summarized the opinion thus.

> From the psychosomatic viewpoint it may be surmised that there is an inherited predisposition to rheumatoid arthritis, and that this may be regarded as having both physical and psychological aspects, i.e. a predisposition to develop a particular somatic pattern is combined with a predisposition to develop a particular personality pattern. . . . Individuals with the rheumatoid predisposition, however, need not necessarily develop the disease. Whether they do so will depend very much on their psychological surroundings, the tendency to somatic manifestations being enhanced if during childhood the parental influences have been inappropriate or

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1. Weiss, Edward, and O. Spurgeon English, Psychosomatic Medicine, Philadelphia, W.B. Saunders, 1949, p. 738.

> if, in later years, they meet - or because of the trends of their personality actually bring about - an excess of frustrating situations.[2]

Many factors have been said to contribute toward onset of the disease. Dean lists fatigue, acute infections, fits of anger, physical hardship, fear of the future, insufficient clothing, mental anguish, and disappointment because a son is a misfit in society.[3]

Alexander finds that in women the main causes can be placed in 3 groups.[4] Their resentment against men has been increased - whether they have been abandoned by a man with whom they felt safe, or because a previously compliant man has become more assertive. Guilt and hostility have been increased - the latter when the birth of a child reactivates an old sibling rivalry, the former when a hated dependent relative dies or when she must accept help beyond her ability to compensate with service. In a few cases the disease appears precipitated when she is forced to accept the feminine role against which she reacted previously with a strong protest.

Patients frequently blame heredity or previous trauma.

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2. Halliday, J.L., Psychosomatic Medicine and the Rheumatism Problem in Practitioner, Vol. 152, No. 907, in the issue of January 1944, p. 6-15.

3. Alexander, Franz, Psychosomatic Medicine, New York, W.W. Norton, 1950, p. 203.

Of 50 interviewed by Ellman, 13 said that there was other "rheumatism" in the family.[4] Ten had had accidents as children to which they attributed great importance. In 6 an accident had occurred just before onset. Twenty-six were engaged in occupations generally regarded as favouring the development of "rheumatism" - miners, bricklayers and quarry men. Nine put blame on the damp weather.

Pains do tend to be located in parts of the body that have been affected by operation, injury or disease.[5] Sometimes the site is determined by identification with disability in a spouse or the symptoms of a deceased person. Where there has been a traumatic injury to the part more often the effect is indirect by means of mental stress and strain consequent to the occurrence.

In 50 patients studied by Cobb there was a close temporal relationship between life stress and the arthritis in 10 males and 21 females.[6] Financial worries existed in all the men and in 11 women. There was the loss of a parent or spouse in 7 patients. In 3 was the problem of an unfaithful spouse.

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4. Ellman, Philip, A Biographical Study of 50 Civilian and Military Cases from the Rheumatic Unit in Annals of Rheumatic Disease, Vol. 3, No. 1, issue of March 1942, p. 56-76.

5. Halliday, J.L., The Psychological Approach to Rheumatism in Proceedings of the Royal Society of Medicine, Vol. 31, issue of Nov. 19, 1938, p. 167-178.

6. Cobb, Stanley, Walter Bauer and Isabel Whiting, Environmental Factors in Rheumatoid Arthritis in Journal of American Medical Association, Vol. 113, No. 8, issue of August 19, 1939, p. 668-670.

In 6 cases a combination of causes existed. The conclusion was that the existence of poverty, grief and family worry had more than a chance relationship with existence of the disease.

At Presbyterian Hospital 31 patients were seen in the wards or at the Arthritis Clinic.[7] All showed fairly severe emotional disturbances of one kind or other that had been present before any signs of arthritis. In 9, arthritis developed weeks or months after the beginning of a depression. In many cases the symptoms of depression were less marked after the appearance of the disease.

In a group of 43 patients that Booth studied, 21 were the oldest or youngest of their family, and 17 were the oldest of their sex.[8] Four were only children. In 32 there had been a difficult family problem during childhood. There was the death of one or both parents in their early years in 19 instances. Four had faced sudden poverty. At the time the arthritis developed, physical factors had been co-incident with increased psychological strain, and the disease had localized in joints where conflict focussed by strain of

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7. Thomas, Giles W., Psychic Factors in Rheumatoid Arthritis in American Journal of Psychiatry, Vol. 93, No.3, issue of November 1936, p. 693-710.

8. Booth, Gotthard Cohen, Personality and Chronic Arthritis in Journal of Nervous and Mental Diseases, Vol. 85, No. 6, issue of June 1937, p. 637-661.

occupation or the patient's desire for immobilization.

Correlation of arthritis and emotional disturbance was suggested by McGregor's findings.[9] In 113 cases one half had been unstable all their lives, and in just less than half a joint exacerbation followed an emotional crisis. In about half there were years of anxiety preceding the onset.

The most common forms of psychopathology associated with the disease are, according to Gildea, conversion hysteria and compulsiveness.[10]

Halliday found that the disease could arise during the course of an anxiety state.[11] The time interval between the emotional encounter and the beginning of the arthritis was variable. In 4 cases it was only a week, in 7 it was 3 months, in 6 it was 6 months, and in 2 he considered it was 2 years.

These opinions and observations of the clinicians were fairly unanimous and do not compare exactly with the recent report of the Empire Rheumatism Council, based on interviews with 532 arthritics and 532 controls. In the

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9. McGregor, H.G., The Psychological Factor in Rheumatic Disease in Practitioner, Vol. 143, No. 858, issue of December 1939, p. 627-636.

10. Gildea, Edwin F., Special Features of Personality Which are Common to Certain Psychosomatic Disorders in Psychosomatic Medicine, Vol. 11, No. 5, issue of September 1949, p. 273-281.

11. Halliday, J.L., Psychological Factors in Rheumatism in British Medical Journal, Vol. 1, issue of January 30, 1937, p. 213-217.

survey no significant difference was found between patients and controls in the occurrence of death, accident, serious illness in the family, economic embarrassment, broken engagements and unhappy marriages.[12]

Support was lent to the existence of a familial factor. Seven per cent of the patients' fathers had arthritis as compared with 3% of the fathers of the controls. There were 15% of the mothers as compared with 9 per cent.

There was no significant difference between the groups in the number of diseases suffered under 15 years, over 25 years or within 2 years previous to onset. The 43 diseases checked included rheumatic fever, scarlet fever, venereal disease, allergic disease, infectious disease, endocrine disease, and diabetes.complications.

There was no significant difference in home conditions, or in their type of work.

There was no significant association of arthritis with the menopause.

Since the publication of the report some disagreement with the findings has been expressed on the basis of clinical observation . Questions have been asked concerning

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12. Report by the Scientific Advisory Committee of the Empire Rheumatism Council, A Controlled Investigation into the Aetiology and Clinical Features of Rheumatoid Arthritis in British Medical Journal, Vol. 1, issue of April 8, 1950, p. 799-805.

the statistical methods used. As it stands, providing no gross errors were made in the conduct of the study, it would seem to emphasize the fact that most of mankind must face difficulties and the nature of their personalities determines how they will attempt to solve them.

The importance of psychological factors in at least some cases of Arthritis is not challenged.

Asthma

The aetiology of Asthma is concisely summarized by Hurst.

> Many years ago I defined asthma as the reaction of an over-excitable bronchial system, including the medullary centre, the vagal nerve-endings, and the bronchial musculature and mucosa to blood-borne irritants and to reflex and psychical stimuli, and I see no reason for altering that definition. The irritable bronchial system, which constitutes the asthma diathesis, is a congenital and often inherited constitutional abnormality.[1]

Hippocrates' teaching that anger and hostility influenced the incidence of asthmatic paroxysms persisted through the Middle Ages.[2] By the beginning of the Nineteenth Century the repression of emotions was considered another cause. In 1860 Salter listed as causes fatigue, physical exhaustion, sudden or violent emotion and venereal excitement. In 1879 Thorowgood wrote that an attack might be brought on and cured when anxiety occurred.

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1. Hurst, Arthur, Asthma in Childhood in British Medical Journal, Vol. 1, issue of April 14, 1943, p. 403-06.

2. Abramson, Harold A., Psychosomatic Aspects of Hay Fever and Asthma in Annals of Allergy, Vol. 6, No. 2, issue of March 1948, p. 110-121.

The part played by allergy is regarded as an important but complex one. For example

> In some cases it would appear that a heavy exposure to the allergic substance is required, and that there be a summation of such stimuli, or even a combination of allergens.
>
> . . . There must be modifying influences, and I conjectured the possibility of an "allergic threshold" beyond which the anaphyllactic or allergic waters overflowed, which could be affected by such nonspecific factors as fatigue, emotional or psychic causes, constipation, infection, and endocrine influences as at menstrual periods and the menopause.[3]

Other workers agreed that poor general health, malnutrition, focal infections, particularly those of the respiratory tract whether primary or secondary, completed with Asthma a vicious circle.[4] Only the clinical history could tell whether they were the cause or the effect.

In 5 cases presented to Hall, in which the disease had existed for at least three years, there was a family history of allergy in each.[5] In 4 there had been

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3. Henderson, A.T., Psychogenic Factors in Bronchial Asthma in Canadian Medical Association Journal, Vol. 55, No. 2, issue of August 1946, p. 106-111.

4. Rackemann, Francis M., Other Factors Besides Allergy in Asthma in Journal of American Medical Association, Vol. 142, No. 8, issue of Feb. 25, 1950, p. 534-38.

5. Hall, Muriel Barton, Asthma in Childhood in British Medical Journal, Vol. 2, issue of July 27, 1940, p. 110-113.

recurrent coughs and colds. In 3 a bronchitic attack immediately preceded the first attack of asthma. In interviewing one patient it was learned that there had been no gross infective processes, but he had suffered parental over-protection from an early age. An immediate satisfactory response to psychotherapeutic treatment indicated the psychogenic basis.

Maxwell reports 150 cases.[6] The causal stimuli were apparently allergic, nasal, from the lower respiratory tract, alimentary, endocrine and psychological. The greatest number of cases showed more than one factor. In 3 patients only psychological factors were found. As a summary he states that in the total number of cases 74 were influenced by psychological factors to a significant degree, and 73 by allergic ones.

It is Pearson's conclusion that there is

> . . . in most cases an allergic basis with secondary infection of the bronchial tree. It is less certain that asthma can occur solely as a result of infection or neurosis in the absence of an allergic foundation. . . An incident calling to mind the circumstances in which an attack has taken place may itself lead to a recurrence of symptoms.[7]

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6. Maxwell, James, Analysis of the Asthmatic Patient in British Medical Journal, Vol. 1, issue of May 2, 1936, p. 874-876.

7. Pearson, R.S. Bruce, The Management of Asthma in British Medical Journal, Vol. 1, issue of June 3, 1950, p. 1311-1314.

The inter-dependence of physical and psychic causes was considered by others, equally carefully.

> In all my relevant cases the cutaneous reactions remained positive even after the elimination of the asthmatic attacks.- i.e. the allergic and specific constitution remained. . . . In many cases an attack will not occur when the patient is invaded, unless the organism is already prepared by certain psychic experiences. . . . Such diseases are also absolutely dependent in their course, even in their origin, on specific psychical influences acting on the patient.[8]

Black's final opinion is that psychological factors induce wheezy breathing along facilitated pathways only in persons who have had the pattern of wheezy breathing already established by allergy.[9]

In a detailed classification of 294 cases it is shown by Williams that there was a history of allergy in the family in over 50%, and one or more previous allergic manifestations in 25% of 246 individuals.[10] In 100 of 276 cases nothing was known of the circumstances concerning onset. In 114 cases bronchitis, pneumonia, measles and cough were thought to be the chief cause. In 14 there was significant shock or worry. In 15 the assoc-

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8. Hansen, K., Allergic and Psychical Factors in Asthma in Proceedings of the Royal Society of Medicine, Vol. 22, 1929, p. 789-800.

9. Black, J. Harvey, The Treatment of Asthma in Journal of American Medical Association, Vol. 137, No. 5, issue of May 29, 1948, p. 453-455.

10. Williams, Elsie O., and G.E.O. Williams, Natural History of Asthma: Review of 300 Cases in British Medical Journal, Vol. 2, issue of Oct. 22, 1949, p. 897-901.

iation was with menstruation and pregnancy. In 13 the cause was dust and irritating fumes. In 9 there was excess exertion. The remainder of the 276 cases were much influenced by changes in food and climate.

The exciting emotional insult is in some instances a short lasting definite one. It can be a brief but dangerous experience involving a clear-cut threat to life.[11] On the other hand it is more usually prolonged.

> The asthmatic stands tension very badly. When pent up, thwarted or frustrated he develops asthma upon the slightest provocation. When free and relaxed he is able to stand far more harmful stimuli without developing an attack.
> . . . The situation which he helps his parents to create is one in which tension is specially engendered. . . . With increased tension comes also increased anxiety and therefore feelings of insecurity.[12]

In children the birth of a sibling is found very often to have occurred at the beginning of the asthmatic condition.[13] In adults sexual temptation or impending marriage may be precipitating factors.

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11. Halliday, James L., Dangerous Occupation; Psychosomatic Illness; and Morale in Psychosomatic Medicine, Vol. 5, No. 1, issue of January 1943, p. 71-84.

12. Rogerson, C.H., The Psychological Factors in Asthma in British Medical Journal, Vol. 1, issue of April 3, 1943, p. 406-407.

13. Alexander, Franz, Psychosomatic Medicine, New York, W.W. Norton, 1950, p. 134.

The attacks are said by some to have poor correlation with the seasons and exposure to allergins.[14] Rather they are co-incident with migration from one place to another in search of social security, the undertaking of great responsibility, the occurrence of illness in the family, or other trying situations.

Stevenson describes the case of a 29 year old male who experienced increased expectoration of mucous in circumstances of conflict and stress.[15] The amount was much decreased each Sunday. During a period of extra tension at his work, the sputum became more purulent and he at once developed sinusitis and pharyngitis.

The significance of emotional disturbances in causing exacerbations is illustrated by what occurred during the conduct of several analyses by French. Three patients whose attacks had begun originally at estrangement from a parental figure obtained initial relief when the analyst took an interest in them.[16] On weekends, or just before long interruptions in the course of interviews, they suffer-

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14. Billings, Edward G., Dynamic and Therapeutic Features of 17 Cases of So-called Psychogenic Asthma in Rocky Mountain Medical Journal, Vol. 44, No. 3, issue of March, 1947, p. 197-199.

15. Stevenson, Ian, and Harold G. Wolff, Life Situations, Emotions and Bronchial Mucus in Psychosomatic Medicine, Vol. 11, No. 4, issue of July, 1949, p. 223-227.

16. French, Thomas M., Psychogenic Factors in Asthma in American Journal of Psychiatry, Vol. 96, No. 1, issue of July, 1939, p. 88-101.

ed more attacks than usual.

Hypnosis can induce or inhibit episodes of bronchial asthma even while the patient is exposed to the substance producing a positive cutaneous reaction.[17] The demonstrable cutaneous allergy can not be removed by suggestion, although the size of the area of reaction has been increased and decreased under hypnosis.

This effect of emotion is practically observed in a group of 50 cases studied by McDermott and Cobb.[18] Of these 37 gave a convincing history of emotional disturbance. The 13 non-emotionals were young males. Twenty said the first attack was emotionally precipitated. Thirty-one said the later attacks were often thus precipitated. Thirty showed other neurotic traits usually compulsive. Of the emotional group, only 20% were benefited by somatic therapy and 20% by drugs; in the non-emotional group, 54% were benefited by somatic therapy and 50% by drugs.

> Many facts indicate that nervous people with their generally increased reflex irritability to the influence of their surroundings, also have a lower threshold for

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17. Eyermann, Charles H., The Emotional Component of Bronchial Asthma in Journal of Allergy, Vol. 9, No. 6, issue of September 1938, p. 565-571.

18. McDermott, Neil T., and Stanley Cobb, A Psychiatric Survey of Fifty Cases of Bronchial Asthma in Psychosomatic Medicine, Vol. 1, No. 2, issue of April 1939, p. 203-244.

the evolution of allergic reactions.[19]

In psychogenic asthma however this allergic predisposition or constitutional weakness of the respiratory system is utilized psychically by the patient. Asthmatic attacks serve a useful purpose in bringing him care and attention.[20]

As Detweiler has phrased it, "When people are unable to act or unable to speak about their problem, the body takes over the function of answering that problem in its own way."[21]

The degree of repression and dissociation that can occur in avoiding active solving of the difficulty is shown in the record of the patient who produced an attack of asthma by looking at some paper goldenrod; she had been normal for the preceding 15 minutes when ignorant of its presence in the room.[22]

Proof of the importance of psychogenic factors in

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19. Ingvar, Sven, Physical Basis of Psychoneurosis in Lancet, Vol. 230, No. 1, issue of February 8, 1936, p. 343-347.

20. Holub. A., Ausbrietung der Indivualpsychologie in Internat: Ztschr. f. Individualpsychol., Vol. 13, 1935, Abstract in Journal of American Medical Association, Vol.106, No. 16, issue of April 18, 1936, p. 1356.

21. Detweiler, H.K., The Psychogenic Factor in Asthma in Canadian Medical Association Journal, Vol. 62, No. 2, issue of February 1950, p. 128-130.

22. Metzger, Frank C., Emotions in the Allergic Individual in American Journal of Psychiatry, Vol. 103, No.5, issue of March 1947, p. 697-699.

asthma is indicated by the measure of relief obtained by psychotherapy,[23] and adjustment of the patients' environment. Children usually improve while in a convalescent home, only to relapse when they return to an unmodified home atmosphere.[24] Good results have been obtained when the therapy was aimed chiefly at the parents.

Some cases have benefited from subjection to a sudden alarm, as did the man who was frightened by a Zeppelin over his house.[25]

Finally, where the conflict was somewhat repressed, relief has come with the administration of Sodium amytal and subsequent ventilation of the problem.[26]

The aetiology of Bronchial Asthma does not rest on any one set of factors, but the share of psychogenesis, even if varying from case to case, has been demonstrated to exist.

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23. Rogerson, C.H., D.H. Hardcastle and K. Duguid, A Psychological Approach to the Problem of Asthma and the Asthma-eczema-prurigo Syndrome in Guy's Hospital Report, Vol. 85, No. 3, issue of July 1935, p. 289-308.

24. Rogerson, C.H., Role of Psychotherapy in Treatment of Asthma-eczema-prurigo Complex in Children in British Journal of Dermatology, Vol. 46, No. 9, issue of September 1934, p. 368-378.

25. Bakwin, Ruth Morris, The Child with Asthma in Journal of Pediatrics, Vol. 32, No. 3, issue of March 1948, p. 320-323.

26. Abramson, Harold A., Hay Fever in Annals of Allergy, Vol. 6, No. 1, issue of January 1948, p. 110-15.

Diabetes

The etiological significance of psychological factors in Diabetes mellitus has been the subject of controversy, although it is generally acknowledged that such factors influence the course of the disease.

The susceptible individual is probably born with limited capacity in the efficiency of one or more regulatory mechanisms.[1] The metabolism of foodstuffs is dependent on the integrated activity of intracellular enzymes and their control by the endocrine and nervous systems. If there is a disturbance in these systems diabetes may result, especially if there is exposure to a sufficiently intense or prolonged stress.

Recent evidence indicates that although glycosuria can be induced in the majority of non-diabetic subjects by intensive emotions, hyperglycaemia does not develop at the same time. Apparently there is rapid compensation for any emotionally induced change. In the diabetic, as Mirsky explains, the regulatory mechanisms are disturbed, and emotional upheavals do increase the degree of the meta-

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1. Mirsky, I. Arthur, Emotional Factors in the Patient with Diabetes Mellitus in Bulletin of the Menninger Clinic, Vol. 12, No. 6, issue of November 1948, p. 187-94.

bolic abnormity. After World War 1 emotion was believed to play little part in the onset of the disease because no increase in incidence had been discovered among military personnel.[2] The influence of stress however, in case material, shows in higher blood sugar levels in established diabetics.

One can argue a further point.

> It is conceivable that individuals with some limitation of their physiological regulatory mechanisms may develop temporary hyperglycaemia under excessive emotional stress. Such individuals undoubtedly have some limitations in their regulation of carbohydrate metabolism, but not of sufficient degree to collapse completely under the particular strain. It is also possible that prolonged and repititious stress may result in a permanent failure of the relatively inadequate physiological systems,[3] with the result that diabetes mellitus ensues.

The emphasis now is away from settling the matter of psychogenesis in diabetes on the frequency of traumatic diabetes, but is laid on the presence of anxiety, concealed or overt, which is unable to discharge through the conscious voluntary system and is forced through regressive changes to discharge at more primitive autonomic levels.[4]

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2. Daniels, George E., The Role of Emotion in the Onset and Course of Diabetes in Psychosomatic Medicine, Vol. 10, No. 5, issue of September 1948, p. 288-290.

3. Alexander, Franz, Psychosomatic Medicine, New York, W.W. Norton, 1950, p. 195.

4. Weiss, Edward, and O. Spurgeon English, Psychosomatic Medicine, Philadelphia, W.B. Saunders, 1949, p. 524.

It is well established that emotional changes can affect the blood sugar level.

In addition it is not conscious emotional conflict that is most important but emotional tension that remains unconscious.

Menninger has noted this. Five of his patients seemed to have developed diabetes either with a mental disorder or during its course.[5] They were a distinctive group in that the mental picture was different from the toxic state seen in either hyperglycaemia or hypoglycaemia. Their metabolic disorder was indicated by persistent glycosuria, retarded glucose utilization curves of the blood sugar, and a response to dietary, and in some cases,insulin therapy. With mental recovery the diabetic condition cleared, so that they needed neither insulin nor dietary treatment. Previous to the diabetic state there had been obvious psychopathology, but since none of the cases lent themselves to analytic investigation the unconscious forces could not be determined.

In 2 of his 93 cases of uncomplicated diabetes he found psychic trauma important in the aetiology. In 5 there had been pre-existing mental disorder.

Neilson observes that in diabetes there are usually

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5. Menninger, William C., The Inter-relationships of Mental Disorders and Diabetes Mellitus in Journal of Mental Science, Vol. 81, No. 333, issue of April 1935, p. 332-357.

mental, nervous, emotional, as well as physical disorders.[6] Severe mental strain and frequent emotional upsets are cited by him as capable of initiating the disease as well as aggravating it.

Several studies give instances of onset subsequent to sudden severe trauma. Liebig, for example, investigated 9 cases in which he felt there was a true causal relationship.[7] In 3 the shock was purely psychic - in 2 others the psychic element predominated. In 4 the trauma was largely physical. In 7 of the 9 the diabetes developed in less than 6 weeks after the episode concerned. One of these, a male of 52 years, had glycosuria 8 days after the railroad coach in which he was riding fell from a bridge 30 feet. At the time he had suffered only a slight injury to the left eye. He could prove that previously bimonthly urinalyses had been normal and the railway admitted responsibility.

During World War 2 it was not possible to prove a causal direct relation between stress and permanent diabetes in 44 combatants.[8] Eight of the cases had developed

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6. Neilson, Charles Hugh, Emotional and Psychic Factors in Disease in Journal of American Medical Association, Vol. 89, No. 13, issue of Sept. 24, 1927, p. 1020-25.

7. Liebig, H., Traumatism and Diabetes Mellitus in Canadian Medical Association Journal, Vol. 28, No. 6, issue of June 1933, p. 681. Abstract.

8. Gendel, B.R., and J.E. Benjamin, Psychogenic Factors in the Etiology of Diabetes in New England Journal of Medicine, Vol. 234, No. 17, issue of April 25, 1946, p. 556-60.

shortly after stress under fire, 6 during service and 1 during readjustment to civilian life.

Reviewing the evidence, Menninger gives the report of Maudsley Hospital that diabetes can be caused by anxiety, of Naunyn that it can develop after mental shock, and of Joslin that a strenuous life seems of importance in the history of diabetic patients.[9]

Once diabetes is established the influence of stress is unquestioned. In a female of 15 years of age, a severe diabetic, fear and rage would produce alterations in metabolism, including ketonuria, within 12 hours. With continuance of stress, ketosis progressed to clinical acidosis.[10] Without dietary change or extra insulin the acidosis disappeared when the subject regained security.

It would appear therefore that man is predisposed to diabetes through heredity but that trying experiences of living can activate a latent diabetic state and can increase the severity of his disease.

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9. Menninger, William C., Psychological Factors in the Etiology of Diabetes in Journal of Nervous and Mental Diseases, Vol. 81, No. 1, issue of January 1935, p. 1-13.

10. Hinkle, Lawrence E. Jr., and Stewart Wolf, Experimental Study of Life Situations, Emotions and the Occurrence of Acidosis in a Juvenile Diabetic in American Journal of Medical Sciences, Vol. 217, No.2, issue of February 1949, p. 130-135.

Hypertension

That psychic factors play a part in essential hypertension is generally admitted, but the degree of their significance is not always understood. This matter will be discussed.

The disease arises from a constitutional susceptibility in combination with the cumulative strain of life and an unduly sensitive sympathetic nervous system.[1]

> It is probable that the constitutional and hereditary factor in essential hypertension is responsible for the inherent vascular hypertonus . . . and that environmental influences produce the vasospastic factors which act as precipitating agents. Thus if one were born with a marked predisposition it would probably take little environmental stress to cause hypertension whereas, if the family history were relatively free and one were born with little predisposition then it would probably take a considerable degree of environmental stress to bring about hypertension. In this way we can assume two interacting processes with the environmental stress mediated by way of the vasomotor system.[2]

The effect of this environmental stress seems to be the production and subsequent repression of unconscious resentment. The increase in blood pressure normally follow-

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1. Palmer, Robert Sterling, The Factor of Mental Stress in Essential Hypertension in New England Journal of Medicine, Vol. 216, No. 16, issue of April 22, 1937, p. 689.

2. Weiss, Edward, and O. Spurgeon English, Psychosomatic Medicine, Philadelphia, W.B. Saunders, 1949, p. 308.

ing exposure to a dangerous or anger provoking situation is protective but is inappropriate as a long term adaptive pattern.[3]

Notwithstanding, emotional conflict can not be regarded as the cause. As Corcoran reminds us, "The psychologic factor is only one phase, although an important phase, in the composite of the degree and kind of renal, endocrine, and nervous participation." [4]

People who by constitution or through early life experience have acquired a greater amount of inhibition than usual tend, however, to repress their aggression. [5] This accumulates and increases in intensity. It makes them less effective in the struggle for life, creates inferiority feelings, and stimulates hostility toward less inhibited competitors. Hostility requires greater control and still stronger inhibitions, forming the prime basis for a vicious circle of neurotic personality. When neurotic symptoms that can drain off the hostility are absent, hypertension may develop.

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3. Menninger, William C., Emotional Factors in Organic Disease in Annals of Internal Medicine, Vol. 31, No. 2, issue of August 1949, p. 207-215.

4. Corcoran, A.C., and Irvine H. Page, Arterial Hypertension in Journal of American Medical Association, Vol. 116, No. 8, issue of February 22, 1941, p. 690.

5. Alexander, Franz, Emotional Factors in Essential Hypertension in Psychosomatic Medicine, Vol. 1, No. 1, issue of January 1939, p. 173-179.

In early childhood many of these patients lack adequate love and affection from their parents, either by neglect or over-protection.[6] They feel a helplessness against any kind of internal or external danger, and develop states of fear and anxiety. They succumb to nightmares; dreams of fighting, falling from buildings, seeing people killed, being chased, being suffocated; temper tantrums and nail biting. To relieve this anxiety and establish some security, they suppress their hostile feelings and try to acquire a passively dependent attachment to one or both parents. Fear of parental disapproval in retaliation for unacceptable behaviour is marked. Characteristically they are obedient and submissive. During illness or when in danger of injury at the hands of others, they seek the protection of the parents; the pattern of dependency is confirmed. Their fight against it takes the form of stubbornness and spite, and chronic dissatisfaction with life.

Commonly they were thrust prematurely into situations of self-reliance.[7] As a result their lives are accompanied by real or imagined threats to their security.

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6. Robbins, Lewis L., Psychological Factors in Essential Hypertension in Bulletin of the Menninger Clinic, Vol. 12, No. 6, issue of November 1948, p. 195-202.

7. Menninger, Karl, Emotional Factors in Hypertension in Bulletin of the New York Academy of Medicine, Vol. 14, No. 4, issue of April 1938, p. 198-211.

After studying 24 patients with hypertension, Binger and his associates presented evidence of a neurotic personality in inter-personal relationships, sex adjustments and often in occupational achievements. Regarding this personality they say that

> . . . the failure of the integrative functions of personality, the inadequacy of the characteristic defenses against anxiety, the inefficiency of the repressive mechanisms and the inability to develop an organized neurosis, rather than the nature of the underlying "instinctive" drives, are what appear to differentiate this disorder from other seemingly similar ones.[8]

It was often possible to trace the neurotic development to early childhood where the common feature was insecurity with a greatly unsatisfied dependent relationship to a threatening parent. With this unhappy beginning the patient went through life ready to fight but afraid to fight. Any future event that jeopardized his security increased to an intolerable degree the amount of anxiety and his reactive depression. In 12 of the 24 cases early death of the parent or separation occurred. In 23 the existence of high blood pressure was first observed after enervating disturbances such as illness or death of a relative; illness, injury or other trauma to the patient; changes in the

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8. Binger, Carl, A Critique of Psychotherapy in Arterial Hypertension in Bulletin of the New York Academy of Medicine, Vol. 21, No. 11, issue of November 1945, p. 610-15.

patient's life such as marriage, separation from parents, illness of a child or loss of a job. The common factors were loss of security or exposure to the aggression of the person on whom the patient was dependent. These, in the opinion of the investigators, do not cause the hypertension. Rather the disorder of the personality and the vasomotor instability are different aspects of the same pathological process.

Ayman and Pratt showed that their patients were suffering from psychoneurosis as well as hypertension. Some 80% of 40 persons were relieved of symptoms by suggestion.[9] Many had suffered emotional disturbances that extended back to their youth and were of a magnitude surpassing those experienced by most normal persons. Others had lived lives full of small annoyances, and reported a high familial history of vascular disease.

Alexander and French agree that

> . . . the early fluctuating phase of essential hypertension is the manifestation of a psychoneurotic condition based on excessive and inhibited hostile impulses. As such it is a reaction of the individual to the complexities of our present civilization.[10]

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9. Ayman, David, and Joseph H. Pratt, Nature of the Symptoms Associated with Essential Hypertension in Archives of Internal Medicine, Vol. 47, No. 5, issue of May 1931, p. 675-687.

10. Alexander, Franz, and Thomas Morton French, Studies in Psychosomatic Medicine, New York, Ronald Press, 1948, p. 295.

That our civilization does demand adjustment and self-control is suggested strongly by the findings that the incidence of hypertension is two and a half times as frequent in the American southern negro as in the southern white, although negroes in Africa rarely have it.[11]

In Tucker's series of 100 cases, the majority had found life very trying. Sixty-nine suffered from over-conscientiousness, worrisomeness, and emotional suppression.[12] Seventy-six were victims of secondary anxiety concerning their condition.

Connell summarizes his experience in this fashion.

> We must recognize that most of our hypertensives become so through their reactions to their environment, to the stresses and strains of life in general. Their nervous systems are highstrung, hair-trigger. They are most of them hyper-conscientious women who feel guilty when they are not doing something, who always cross their bridges before they come to them, and who generally take life far too seriously.
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> . . . . . .
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> Today we believe that much clinical hypertension is initiated by neurogenic mechanisms but that, sooner or later, important humoral mechanisms step in and take over the job of maintaining and aggravating the abnormal vascular tension.[13]

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11. Schultze, V.E., and E.H. Schwab, Arteriolar Hypertension in the American Negro in American Heart Journal, Vol. 11, No. 1, issue of January 1936, p. 66-74.

12. Tucker, Walter I., Psychiatric Factors in Essential Hypertension in New England Journal of Medicine, Vol.243, No. 6, issue of August 10, 1950, p. 211-215.

13. Connell, W. Ford, Hypertension and its Management in Canadian Medical Association Journal, Vol. 54, No.4, issue of April 1946, p. 348-349.

Hypertensive patients are prematurely old mentally. They live intensely, work desperately to achieve their aims, and look forward with anxiety to the future.[14] They do not believe in holidays. They lack hobbies. They do not engage in sports. Their imagination is undeveloped and their humour inclined to be sadistic. Many attain success and many have success slip from their grasp. There need not be a crisis that is temporally or otherwise significant.[15] The entire life perspective of such individuals constitutes the psychological trauma.

The frequency of compulsive behaviour is explained by their difficulty in controlling their aggression.[16] It is an attempt to allay anxiety arising from their destructive impulses, an effort to placate a guilty conscience. Essential hypertension may even disappear in giving way to a full-fledged compulsion neurosis that drains the hostility.

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14. Moschcowitz, Eli, and Mata B. Rondin, Association of Psychosomatic Disorders and their Relation to Personality Types in Some Individuals in New York State Journal of Medicine, Vol. 48, No. 12, issue of June 15, 1948, p. 1375-81.

15. Saslow, George, Possible Etiologic Relevance of Personality Factors in Arterial Hypertension in Psychosomatic Medicine, Vol. 12, No. 5, September 1950, p. 292-302.

16. Alexander, Franz, discussion on the presentation of Gregory Gressel, Personality Factors in Arterial Hypertension in Journal of American Medical Association, Vol. 140, No. 3, issue of May 21, 1949, p. 265-272.

Conversely the majority of 100 patients at Presbyterian Hospital stated that times when they were having new attacks, when the level of their blood pressure was relatively high, they were unusually disturbed.[17] Repeatedly they had dreams of some life-threatening situation.

Or again there may be an almost sudden disappearance of symptoms when the patient is relieved of emotional strain without any change in the level of the elevated blood pressure.[18]

When environment is very similar, and heredity ostensibly identical, it is of interest to note the development of hypertension in only one of identical twins.[19] The healthy one was more robust and more alert. His brother was aggressive, conscientious, and more active socially. The question can be raised whether a feeling of rivalry with repressed hostility was associated significantly with his success and his hypertension.

In 1948 Jones reported studies on 34 year old female parabiotic pygopagus twins - joined together at the sacrum.

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17. Wolfe, Theodore P., Dynamic Aspects of Cardiovascular Symptomatology in American Journal of Psychiatry, Vol. 91, No. 3, issue of November 1934, p. 563-574.

18. Robinson, G. Canby, The Relation of Emotional Strain to Illness in Annals of Internal Medicine, Vol. 11, No. 2, issue of August 1937, p. 345-353.

19. Friedman, Meyer, and J.S. Kasanin, Hypertension in Only One of Identical Twins in Archives of Internal Medicine, Vol. 72, No.6, issue of December 1943, p. 767-774.

Inter-communication of their vascular systems was demonstrated.[20] Mary had labile hypertension, normal at rest; Margaret had Grade 2 hypertension . Mary was stout and calm, easy going and carefree. Margaret was thin, high strung, apprehensive, concerned about her health and her finances. On the Rorschach she showed manifest anxiety in colour shock, while Mary showed only latent anxiety. The more exaggerated response to tetraethylammonium chloride by Margaret proved her increased vasomotor tonus. In her there existed renal and tension factors but in Mary hereditary and humoral factors predominated. In each there was some chronic anxiety. This is a good example of the uniqueness of personality despite the influences of heredity and environment.

The existence of a psychological factor in the development of hypertension is indicated by the degree of relief that can be afforded patients through reassurance and suggestion. Ayman has obtained good results with the administration of dilute hydrochloric acid.[21] Pratt secures the same by a series of lectures interspersed with testimonies from patients who have improved . Two thirds of those who attend

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20. Jones, Stewart H., Omar Z. Younghusband and James A. Evans, Human Parabiotic Pygopagus Twins with Hypertension in Journal of American Medical Association, Vol. 138, No. 9, issue of October 30, 1948, p. 642-645.

21. Ayman, Davis, An Evaluation of Therapeutic Results in Essential Hypertension in Journal of American Medical Association, Vol. 95, No. 4, issue of July 26, 1930, p. 246-9.

three or more meetings are found to have a fall in blood pressure that is significant. An explanation of the physiology of hypertension and the testimony that early symptoms are psychic are apparently comforting.[22]

The lowering of blood pressure does not constitute the sole approach to the problem, nor can hypertension be eradicated by any psychotherapeutic process.[23] It may be argued however that emotions are related intimately to the development of hypertension in some, to the production of symptoms in many and have a part in the treatment of nearly all.[24]

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22. Buck, Robert W., The Class Method in Treatment of Essential Hypertension in Annals of Internal Medicine, Vol. 11, No. 3, issue of September 1937, p. 514-518.

23. Weiss, Edward, Psychosomatic Aspects of Arterial Hypertension in American Practitioner, Vol. 2, No. 1, issue of September 1947, p. 19-24.

24. Weiss, Edward, and O. Spurgeon English, Psychosomatic Medicine, Philadelphia, W.B. Saunders, 1949, p. 310

Rheumatic Heart Disease

It would seem likely that there is a psychosomatic predisposition to this disease. The noxious agents that have been suspected of being responsible are widely present among the population, and it becomes necessary to account for the difference in immunity shown by different individuals.

In all types of patients there is a nostalgia for childhood, in spite of the fact that the early years were usually unstable and full of conflict. About 40% of one group lost either father or mother before they were 16 years old.[1] Step-parents were frequent. Very few lost both parents at an early age.

In general the parents were strict, particularly the mothers. The patients seem to prefer the more dominant one, rather than the gentle understanding parent.[2] In this way these patients derive compensation through exploitation of their ability to suffer, and find pleasure in thwarting their own freedom. They certainly seek enjoyment by attempting to win the admiration and esteeem of others for their

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1. Dunbar, Flanders, Psychosomatic Diagnosis, New York, Paul B. Hoeber, 1943, p. 420.

2. --------. Psychosomatic Diagnosis, p. 423.

ability to take punishment. There is very little sadism involved. They are more interested in showing what a beating they can take than in seeing others take one. They have very little interest in whipping themselves into shape.

In childhood, phobias, nightmares, frights and tics were prominent. Lying was relatively marked.[3]

Traumatic experiences were important - in the majority of cases they were severe frights, not traumatic deaths.[4] Most were also exposed very early to cardiovascular and severely nervous disturbances in parents or others to whom they felt strong emotional attachment.

> Disturbances of breathing, hysterical conversion symptoms, palpitation, on the other hand are prominent and seem to have been present in childhood. In several instances in which early medical histories were available, it was possible to demonstrate the presence of these physiological disturbances long before any cardiac damage had occurred, and before there had been any evidence of rheumatic disease. To these observations is added the fact that such manifestations of disequilibrium tend to be more prominent in the interim betweeen attacks when the heart is relatively well compensated. Hence the disequilibrium cannot be understood solely in terms of organic damage.[5]

The patients did not tend to carry their dependence on their parents into adult life, and the resentment and re-

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3. Dunbar, Flanders, Psychosomatic Diagnosis, p. 421.

4. --------, op. cit., p.418.

5. --------, op. cit., 429-430.

bellion commonly felt by other persons against their parents was here replaced by fear. This might be so intense that they were almost hypnotized by the actions of their parents, no matter how unjust they might be.[6] Even as adults traces of anxiety may be detected in their behaviour and signs of hysteria.[7]

One group in hospital showed reactions against feelings of inferiority and frustration. They showed evidence of fears and phobias, and also admiration for the people who frightened or abused them.[8]

A deep-lying sense of inadequacy is not admitted. Instead they compensate for it by sociability, making themselves liked, overdoing in various ways, and indulging in phantasies until they are better satisfied.

Over-activity can be observed in participation in athletics, adventurous projects, using the demands of religion as excuses for taking long walks against doctors' orders. A large per cent choose active jobs in unskilled labour, some even in preference to sedentary jobs that are actually offered them.[9]

The origin of their inadequacy is found in the early

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6. Dunbar, Flanders, Psychosomatic Diagnosis, p.420.
7. --------, op. cit., p. 434.
8. --------, op. cit., p. 421.
9. --------, op. cit., p. 422.

inability to decide whose part to take between father and mother.[10] As a result they tried to imitate and obtain favours from one or the other. Their attitude remained infantile when fear prevented rivalry with anyone thought to be superior.

Admission to hospital usually occurs as a result of unusual exertion, from experiencing a fright, or on being overcome by their deep-lying anxiety.[11] They seldom succeed in their attempts to assume responsibilities and are thrown into somatic attacks by their failures.[12]

Therefore there is some evidence that psychological factors have some bearing on the occurrence of repeated attacks of decompensation; there is indication that experiences during early childhood may make more susceptible the predisposed individual.

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10. Dunbar, Flanders, Psychosomatic Diagnosis, p. 423.

11. --------, op. cit., p. 422.

12. --------, op. cit., p. 431.

Thyrotoxicosis

Before the overt onset of the actual illness there has usually been one or more episodes of nervousness or breakdown.[1] Hysteria, anxiety, and paranoid and manic-depressive tendencies may have been observed.

It would seem as if the individuals had not enjoyed freedom from tension. As Crile writes

> I have never known a case of Graves's disease to be caused by success or happiness alone, or by hard physical labour unattended by psychic strain, or to be the result of energy voluntarily discharged.[2]

In 85 per cent of 3343 cases investigated by Bram,[3] there were three features commonly in the histories. One or more relatives had nervousness, exophthalmic goitre or diabetes. The patient had been more or less nervous, irritable, impatient and emotionally inclined. The onset of symptoms was soon after psychic trauma. In 13% the trauma consisted

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1. Weiss, Edward, and O. Spurgeon English, Psychosomatic Medicine, Philadelphia, W.B. Saunders, 1949, p. 475.

2. Brown, W. Langdon, Endocrines and Mental Disorders in Practitioner, Vol. 137, No. 1, issue of July 1936, p. 5.

3. Bram, Israel, Psychic Trauma in the Pathogenesis of Exophthalmic Goitre in Endocrinology, Vol. 11, No. 2, issue of March 1927, p. 106-116.

of accident or imminent personal danger, in 7% surgery that was usually minor, in 4% parturition, and in 61% worry, grief and significant disappointment.

In 40% a nervous breakdown had occurred within two years. In 15% more than one traumatic experience had occurred.

There is in at least 90%, according to this observer, a clear history of psychopathic predisposition.[4] In a shipwreck, for example, 49 of the 50 persons involved make a complete recovery. One susceptible individual remains with trembling limbs, staring eyes, clammy skin, a racing heart and other features of fright.

In some instances it is believed that the onset may be dated from the occurrence of an infection.[5] Wallace reports that in 440 cases 62% appeared to date from shock, worry and over-work, but 120 cases, or 23.7%, were preceded immediately by tonsillitis, influenza, or rheumatism.

This is confirmed in another study, but the incidence of such disease was much less.[6] In 5000 cases there

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4. Bram, Israel, The Psychic Factors in Exophthalmic Goitre in Journal of American Medical Association, Vol. 77, No. 4, issue of July 23, 1921, p. 283-285.

5. Wallace, H.L., Hyperthyreoidism in Edinburgh Medical Journal, Vol. 38, No. 10, issue of October 1931, p. 578-589.

6. Bram, Israel, Psychic Trauma in the Etiology of Graves' Disease in American Journal of Psychiatry, Vol. 92, No. 5, issue of March 1936, p. 1077-1094.

was a clear history of psychic trauma in 90%, but in 4% a general or focal infection that appeared significant. This was usually influenza, pneumonia, tuberculosis or syphilis.

The causal effect of severe exhaustion was considered fifty years ago.[7] Notes were recorded concerning the sudden appearance of a palpable thyroid gland, prominent eyes and palpitation of the heart in two soldiers, previously normal, who had been in severe fighting. One said that during action he had felt excited and nervous; the other had been cool and composed.

In 1917 there were 50 such cases reported in the military records.[8] The exophthalmos lasted only two or three weeks. When it disappeared the patients were left with neurasthenia and neuro-circulatory asthenia.

Graves himself wrote in 1893, ". . . no immediate cause is so frequent as emotion, sudden terror or prolonged distress."[9]

Parry had given an example of the second cause as

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7. Harland, W.H., Notes on Two Cases of Exophthalmic Goitre Appearing Suddenly in Men Who Have Been in Action in British Medical Journal, Vol. 2, issue of Sept.1, 1900, p. 584.

8. Johnson, W., Symptoms of Hyperthyroidism Observed in Exhausted Soldiers in British Medical Journal, Vol. 1, issue of March 22, 1919, p. 335-337.

9. Newburgh, L.H., and C.D. Camp, The Influence of Anxiety States on the Thyroid Gland in Annals of Clinical Medicine, Vol. 4, No. 12, issue of June 1926, p. 1006.

early as 1825.

> Elizabeth S., aged 21, was thrown out of a wheelchair in coming fast down a hill . . . and was very much frightened though not much hurt. From this time she has been subject to palpitation of the heart and various nervous affections. About a fortnight after she began to observe a swelling of the thyroid gland.[10]

Many modern workers, including Lidz, believe that most patients are showing reaction to the disruption (or threat of it) of dominant interpersonal relationships upon which their security rests.[11] Furthermore, these crises contribute to illness only in people specifically vulnerable through personality makeup or perhaps endocrinologically.

In 12 female patients Smith discovered, for example, that there was frequent marital discord. When this was terminated, the symptoms and the slightly elevated metabolic rate disappeared.[12]

Brown was similarly impressed with the great influence of emotion, "especially if it has a matrimonial origin". He cites the case of an unmarried lady who de-

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10. Parry, C.H., Collected Works, London, 1825, Vol. 1, p. 478, quoted in Psychosomatic Medicine by Theodore Lidz in Emotional Factors in the Etiology of Hyperthyroidism, Vol. 11, No. 1, issue of January 1949, p. 2

11. Lidz, Theodore, and John C. Whitehorn, Life Situations, Emotions and Graves' Disease, in Psychosomatic Medicine, Vol. 12, No. 3, issue of May 1950, p. 184-186.

12. Smith, Philip S., Mild Hyperthyroidism and the Neuroses in Annals of Internal Medicine, Vol. 4, No. 11, issue of May 1930, p. 1460-1468.

veloped the illness when circumstances forced her to send the niece, who had been living with her, back home to India.[13]

In a group of 103 cases reported by Goodal emotional factors were prominent in them all.[14] Specific traumatic incidents were believed to be responsible at times, as in the male who immediately showed signs of the disease after he had the experience of seeing his house afire while unable to rescue his wife and baby inside.

Conrad found evidence of psychic traumata in 94% of 200 patients.[15]

Twenty-eight per cent of Maranon's 159 patients volunteered the information that their disease was precipitated by an emotional upheaval.[16]

The nature of this disturbance is well summarized by Weiss and English.

> Many hyperthyroid patients showed endocrine imbalance in their development and family history. The body form was often that of hypogonadal development. So far as the psychic situation was concerned some abnor-

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13. Brown, W. Langdon, Minor Endocrine Disturbances and their metabolic and Psychical Effects in British Medical Journal, Vol. 2, issue of Dec. 8, 1923, p. 1073-1077.

14. Goodal, J.S., and L. Rogers, The Effects of the Emotions in the Production of Thyrotoxicosis, Medical Journal and Record, Vol. 138, No. 5, issue of May 1944, p. 411-416.

15. Conrad, Agnes, The Psychiatric Study of Hyperthyroid Patients in Journal of Nervous and Mental Diseases, Vol. 79, No. 5, issue of May 1934, p. 505-529.

16. Maranon, G., Le facteur emotionale dans la pathogenie des etats hyperthyroidism in Ann. de Med., Vol. 60, 1921, p. 81, cited by Franz Alexander in Psychosomatic Medicine, p.170.

> mality in the mother-child relation was usually obvious. Examinationf ot the female patient often revealed anxiety at the time of onset of acute symptoms, thich followed in the main two patterns: (1) a fear of loss of shelter and affection, often apparently equivalent to deprivation of the mother or loss of the mother's approval, and 92) a fear of the dangers of the mother role. Many of the patients had been subjected to a strain with a resulting sense of inadequacy in the "mother's care of child" relation which seemed to be badly tolerated by them. This kind of strain appeared to precipitate the syndrome or to bring about an exacerbation.[17]

This matter of exacerbations was investigated by Murray in 144 patients. In every case he decided that, whether the patient had submitted to surgery or was being controlled by thiouracil, the relapse was accounted for by an emotional disturbance.[18]

The influence of the environment in the production of the disease is well illustrated by Deutsch's report of 4 females living in the same house who all developed the disease through identification.[19]

Conversely Rogers writes that "unfavorable environment is one of the common causes for provoking expend-

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17. Weiss, Edward, and O. Spurgeon English, Psychosomatic Medicine, p. 474-475.

18. Murray, Ian, Observations of the Treatment of Thyrotoxicosis in British Medical Journal, Vol. 2, issue of July 8, 1950, p. 80-84.

19. Cited by Dunbar, Flanders, Emotions and Bodily Changes, New York, Columbia University Press, 1938, 2nd edition, p. 154.

iture of energy - by avoiding this, many people seem to have the disturbance arrested midway between hypo- and typical hyper -thyroidism." [20]

The aetiology of thyrotoxicosis is not confined to any one set of factors. Hereditary endowment and the state of the physical constitution play a part. Subjection to traumatic incidents appears to signify increased susceptibility to the disease, and there are those who believe that alleviation of the disturbing effects exerted on the personality by those insults has great therapeutic value.

> I am convinced that in some cases that I have seen with all the symptoms of Graves' disease, including increased basal metabolism and other laboratory findings, the condition has been completely and permanently relieved by the relief of some repressed mental conflict. [21]

Such optimism regarding the worth of psychotherapy in t
in the treatment of thyrotoxicosis may or may not be justified. It can be affirmed however that psychological factors appear significant in the aetiology.

20. Rogers, John, The Surgical Neuroses of the Thyroid Gland in American Journal of Medical Sciences, Vol. 165, No. 1, issue of January 1923, p. 66-80.

21. Camp, C.D., Endocrinal Disturbances of Emotional Origin in Journal of Michigan Medical Society, Vol, 28, No.1, issue of January 1929, p. 93.

Tuberculosis

In a study of middle class tuberculous patients Day set out to learn whether or not psychological factors were important in causing their illness. He concluded that in 60% tuberculosis or some similar chronic incapacity was necessary to them at that time, because of their life pattern, and would be necessary to them.

> . . . the patient is ready to be ill, and the ubiquitous bacilli both endogenous and exogenous are there ready to oblige. . . . This is tantamount to saying that tuberculosis provides means for a flight from frustration, for self-punishment and all those other dark urges which are continually shipwrecking our best behaviour.[1]

All disease is the failure to a greater or less degree of adaptation between the living organism and its environment.[2] Physical deterioration follows as soon as the mind ceases functioning at its best. Therefore, according to Breuer, long mental conflict, excess fatigue and emotional situations from which there is no escape prepare the way for tuberculosis.

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1. Day, George, Observations on the Psychology of the Tuberculous in Lancet, Vol. 251, No. 2, issue of November 16, 1946, p. 703-706.

2. Breuer, Miles J., The Psychic Element in the Aetiology of Tuberculosis in American Review of Tuberculosis, Vol. 31, No. 2, issue of February 1935, p. 233-39.

A typical case is described.[3] A timid man with lack of confidence from early childhood failed to make the necessary adjustment to reality. Tension developed and prevented attaining success. Broken down with a sense of inadequacy and filled with fear he eventually reached a sanatorium. There was much fear there, and in the minds of the patients no security of place, income or reputation.

In Breuer's group of 100 cases, the tuberculosis was "psychologically determined" in 34 of them.[4] Parental mishandling had occurred in 8 in early life. In 11 there were marital difficulties. Constitutional difficulties existed in 9, and occupational maladjustment in 3 of them. It was Breuer's opinion that interference with the adaptive function of the mind produces a disturbance of physical adaptation that increases susceptibility to disease.

At another hospital, 13 of 16 consecutive admissions displayed obvious dependency strivings.[5] In at least 2, the evidence strongly suggested that dependency needs contributed significantly to the tuberculous breakdown. In one half the cases severe emotional conflicts were present at or

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3. Eyre, Mary B., The Role of Emotion in Tuberculosis in American Review of Tuberculosis, Vol. 27, No. 4, issue of April 1933, p. 315-329.

4. Breuer, Miles J., The Psychic Element in the Aetiology of Tuberculosis, p. 234.

5. Benjamin, John D., Jules V. Coleman and Ruth Hornbein, A Study of Personality in Pulmonary Tuberculosis in American Journal of Orthopsychiatry, Vol. 18, No. 4, issue of October 1948, p. 704-707.

shortly before onset of illness. This supports the view the other workers expressed that psychological factors play perhaps a predominant role in the aetiology of the disease.

Where latent tuberculosis exists, psychic trauma may activate it by way of the autonomic nervous system.[6] By increasing the basal metabolic rate through fear and other strong emotions, it causes the discharge of excessive and wasting nervous energy, and lowers the resistance of the body.

There would seem to be 4 types of patients; the overtly insecure, the rebellious, the self-driving, and the conflict harassed.[7] Before the disease was in evidence, when situations endangered their defence systems, all groups reacted disproportionately . With the onset of illness most of the patients of the first type surrendered almost voluptuously to a state of utter dependence, but the others attempted to keep up their defence against dependency.

Wolepor divided his 100 patients into 5 groups; the rebellious 22, phlegmatic 16, pessimistic 12, optimistic 7, and apprehensive 43. In 40 there was neurasthenia.[8] Forty-

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6. Conlogue, Everett L., Mental and Nervous Phenomena in Tuberculosis in American Review of Tuberculosis, Vol. 42, No. 2, issue of August 1940, p. 161-173.

7. Wittkower, Eric, A Psychiatrist Looks at Tuberculosis, London, The National Association for the Prevention of Tuberculosis, 1949, p. 152.

8. Wolepor, Ben, The Mind and Tuberculosis in American Review of Tuberculosis, Vol. 19, No. 3, issue of March 1929, p. 314-326.

four had shut-in characters and 56 were good mixers. Like alcohol tuberculosis did not seem to produce a psychopathology of its own, it merely revealed individuals.

Many of these consulted their doctors not for symptoms of the chest but for "nervousness" and depression due to ill-health.[9] They were full of notions concerning the food they ate, and unreasonable in their personal care. Some did have, in addition to the tuberculosis, true neurasthenia. The nature of the diagnosis produced fear which was usually not completely dispelled.[10] They might refuse to believe they had the disease. They might deceive themselves regarding its seriousness. They might put their faith in a special doctor or treatment and become ritualistic. They might become hypochondriacal and rush to the sanatorium for refuge.[11] Most did not day-dream of any future; they asked fatalistically "What is the use?"[12]

In a group that included 69 with a normal emotional

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9. Jelliffe, Smith Ely, and Elida Evans, Psychotherapy and Tuberculosis in American Review of Tuberculosis, Vol. 3, No. 7, issue of September 1919, p. 417-432.

10. Ross, C.B., and W.S. Stanbury, The Psychology of Tuberculosis in American Review of Tuberculosis, Vol. 28, No. 2, issue of August 1933, p. 217-228.

11. Hartz, Jerome, Tuberculosis and Personality Conflicts in Psychosomatic Medicine, Vol. 6, No. 1, issue of January 1944, p. 17-22.

12. Strecker, Edward A., Francis J. Braceland and Burgess Gordon, Mental Attitudes of Tuberculous Patients in Mental Hygiene, Vol. 22, No. 4, issue of October 1938, p. 529-543.

outlook there were 9 with neurasthenia, 10 with anxiety and 1 with hysteria.[13] These latter were more common where the tuberculosis was minimal . The anxiety, found especially among the males, when combined with fear, depression, excitability, loss of concentrative powers and somatic disturbance, was really a neurosis. Fatigue, especially in the females, combined with irritation, depression, insomnia, and somatic disturbance, was really a fatigue neurosis. Of the patients who suffered from these two types of neurotic state no correlation was found with their age, body type, severity of toxaemia or the extent of their disease. There was definite correlation with the personality pattern of these individuals before onset of the tuberculosis.

The pattern to a significant degree influenced their attitude to treatment.[14] Some developed slangy speech to keep away their fears; some, very apprehensive, treated all their trivial symptoms with great seriousness; others played the fool, ignored the thermometer and regressed from facing reality.

Of 100 Veterans at the Missouri Sanatorium, 20 left

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13. Forster, A.M., and Charles E. Shepard, Abnormal Mental States in Tuberculosis in American Review of Tuberculosis, Vol. 25, No. 3, issue of March 1932, p. 324-333.

14. Norland, A., The Mind in Tubercle in Lancet, Vol. 222, No. 1, issue of January 23, 1932, p. 176-178.

contrary to medical advice during the first year of treatment in 1942-43.[15] The probable reasons for their action are serious personal problems, chronic alcoholism, psychopathy, and ignorance. Their disease did not change them; it merely accentuated what maladjustments had been present before.

To show the significance of the psychological factor in tuberculosis, and the limits of suggestion on both objective and subjective aspects of it, Bourgeois conducted an experiment on 8 patients who had been admitted to receive streptomycin but for whom the drug had been found to be contra-indicated. For 6 weeks in the streptomycin ward they were given injections of isotonic hydrochloric acid. In all, euphoria resulted and an increased appetite.[16] In 7 there was an increase in weight up to 3.2 Kg. and in 1 up to 7.0 Kg. Fever was reduced in 2. Expectoration was reduced by two thirds in 1. In 2 with laryngitis, the dysphagia disappeared, and the laryngologist, not informed of the experiment, found favourable modification of the laryngeal signs. However, sterilization of expectoration was not observed and there was no indisputable improvement in the X-ray picture.

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15. Ashmore, B.L., and F.G. Bell, Neuropsychiatric Concomitants of Tuberculosis in Medical Bulletin of the Veterans Administration, Vol. 20, 1943, p. 190.

16. Foreign Letters, Paris, February 19, 1949, in Journal of American Medical Association, Vol. 139, No. 17, issue of April 23, 1949, p. 1222.

A somewhat similar study was made when comparison of patients' emotional reactions showed no difference between 207 with tuberculosis and 30 who thought they had it but did not.[17]

In fact the psychological factor is so important that Hayes places its influence on the prognosis at 80 - 90%.[18] Palmer quotes an opinion that temperament counts 30% in recovery and climate only 10%.[19]

One feels justified in the conclusion that although the genesis of tuberculosis rests on several hereditary and acquired characteristics the element of psychogenesis is of significance.

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17. Brown, Lawrason, The Mental Aspect in the Etiology and the Treatment of Pulmonary Tuberculosis in International Clinics, Vol. 3, 43rd series, 1933, p. 149-174.

18. Hayes, E.W., The Prognosis in Tuberculosis with Especial Reference to the Psychological Aspects in Annals of Internal Medicine, Vol. 4, No. 9, issue of March 1931, p.1183-7.

19. Palmer, George Thomas, Psychology of the Tuberculous Patient in Illinois Medical Journal, Vol. 45, No. 1, issue of January 1924, p. 56-58.

Peptic Ulcer

In a review of the etiology of peptic ulcer, Euster-man states that the causative factor in the vast majority is psychogenic.[1] This is mediated through the autonomic nervous system, producing a morbid physiological state conducive to the initiation, extension and chronicity of the lesion.

The ulcer is not however the result of a single agent, and a constitutional or systemic factor is fundamental. Where ulcers are reported to occur in infancy and early childhood at a time when emotional conflicts are perhaps less disturbing, this is but an example of a dominance of the constitutional factor.[2]

That conscious emotional factors are effective in creating gastric disturbances is well demonstrated. Wolff, by observing a patient with a gastric fistula, saw that induced anger and resentment was shortly followed by hypermotility and hypersecretion of the stomach.[3] Mucosal erosions developed readily with even trifling trauma, and bleed-

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1. Busterman, G.B., Journal of the Medical Society of New Jersey, Vol. 36. 1939, p. 1. Cited in Psychosomatic Medicine by Edward Weiss and O. Spurgeon English, Philadelphia, W.B. Saunders, 1949, p. 434.

2. Weiss, Edward, and O. Spurgeon English, op. cit., p. 433.

3. Wolf, Stewart, and Harold G. Wolff, Evidence on the Genesis of Peptic Ulcer in War in Journal of Medical Association, Vol. 130, No. 9, issue of October 31, 1942, p. 670-75.

ing points frequently appeared spontaneously as a result of the contractions of the stomach wall.[3]

In addition strong influences in the unconscious mental life are believed to play a part in producing ulcer. Constant psychic stimulation of subcortical centres can apparently cause functional disturbance in the upper digestive tract.[4] Ulcer patients, on psychoanalysis, are believed to have a strong desire for dependence on others in the unconscious mental life, but consciously are dominated by ideas of independence, activity and success. When their receptive cravings are unsatisfied, the repressed wishes to be loved and cared for find motor expression in stomach symptoms. The sensations of being loved and being fed are emotionally associated since the first form of being cared for is nursing. If then the wish to be loved is denied gratification, the associated tendency for being fed is activated and the stomach behaves as if it were being offered nourishment.

Less enthusiastic exponents of this theory are inclined to say that psychogenic factors are most effective

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3. Wolf, Stewart, and Harold G. Wolff, Evidence on the Genesis of Peptic Ulcer in Man in Journal of American Medical Association, Vol. 120, No. 9, issue of October 31, 1942, p. 670-675.

4. Weiss, Edward, and O. Spurgeon English, Psychosomatic Medicine, p. 438.

as a cause of a recurrence, and only to a lesser degree as the primary cause.[5]

McLester believes that in one third of the cases the cause is not external at all, but due to inherent emotional instability.[6] The patient is made of substandard material. He suffers disturbances of muscle tone and motility, and must learn to live within his limitations.

As a general observation it is pointed out that ulcer patients rarely if ever make a good adjustment to life according to ordinary standards and appearances.[7] Their emotional life histories are interchangeable with those of anxiety neurosis; there is in each group evidence of an insecure childhood with some disturbing concern in relation to the immediate life situation.

The majority are from broken homes.[8] Their fathers were rather unimportant and indifferent. The mothers were

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5. Riese, Jacob A., Peptic Ulcer - Is it a Psychosomatic Disease? in Review of Gastroenterology, Vol. 15, No. 2, issue of February 1948, p. 159-161.

6. McLester, James S., Emotional Instability as Frequent Cause of Digestive Disorders in Southern Medical Journal, Vol. 25, No. 5, issue of May 1932, p. 500-503.

7. Cathcart, J.P.S., The Emotions in Gastro Intestinal Disturbances in Canadian Medical Association Journal, Vol. 55, No. 5, issue of November 1946, p. 465-470.

8. Moses, Leon, Psychodynamic and Electroencephalographic Factors in Duodenal Ulcer in Psychosomatic Medicine, Vol. 8, No. 6, issue of November 1946, p. 405-409.

strict, unloving, or overprotective. They may be compelled to live with the in-laws.[9]

Sexual adjustment is unsatisfactory. There may be the extra strain of a June-December marriage. There may be fear of a drunken husband. There may be worry over fidelity.

The influence of their emotional tension is illustrated by a study by Steigmann.[10] In Cook County Hospital, Chicago, during one year, negro patients presented with 12.7% of all the peptic ulcers. This is a higher proportion than is shown by the Southern negro or whites of agricultural areas. Racial selectivity is not substantiated. The average time in Chicago, in an urban industrial environment, before symptoms developed was six years.

It is estimated by Sullivan that in 18% of the patients suffering gastro-intestinal ailments the symptoms are entirely of emotional origin; in 25% emotional factors are combined with poor habits; in 27% there is organic disease with emotion playing a large part in the aetiology, and in 31% the emotional factors are very small.[11]

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9. Boland, Edward W., Psychogenic Rheumatism - the Musculoskeletal Expression of Psychoneurosis in Annals of Rheumatic Disease, Vol. 6, No. 4, issue of December 1947, p. 200.

10. Steigmann, Frederick, The Peptic Ulcer Syndrome in the Negro in American Journal of Digestive Diseases and Nutrition, Vol. 3, 1936, p. 310-315.

11. Bond, Earl Danford, Psychiatric Contributions to the Study of the Gastro-intestinal System in American Journal of Digestive Diseases and Nutrition, Vol. 5, 1938, p. 482-486. Discussion by Sullivan, p. 485.

In 205 patients, 84 had their first ulcer symptoms after an emotional disturbance - changes in their work, financial difficulties, illness among members of the family, or personal misfortune. They had long been under tension previously.[12] Under 25 years the most important cause appeared to be related to a change of job; over 25 years changes in income were most worrying. In such persons anxiety and disappointment are strong when they fail in what they attempt.

Among American troops in North Africa, there was a family history of dyspepsia in 44% of the cases that were treated for peptic ulcer. Nervous tension and increased anxiety were regarded as influential in aggravating the illness. Associated with their condition were anxiety phobias, mild or moderate psychosexual disorders, and a tendency to alcoholism. Among the married men the divorce rate was high. There had been a high incidence of unfavourable childhood home environment, and it appeared as if they were solving underlying insecurity by restlessness, impatience, and the development of abnormal drive.[13]

Not all ulcer patients react in this way - there are two other mechanisms for expressing dependence on others.

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12. Davies, Daniel T., and A.T. Macbeth Wilson, Observations on the Life-history of Chronic Peptic Ulcer in Lancet, Vol. 233, No. 2, issue of December 4, 1937, p.1353-60.

13. Halsted, James A., and Harry Weinberg, Peptic Ulcer Among Soldiers in the Mediterranean Theater of Operations in New England Journal of Medicine, Vol. 234, No. 10, issue of March 7, 1946, p. 313-320.

One group partially give in their desires - they appear shy and passive with trends of feminine identification in their overt personalities.[14] The other group utilize socially unacceptable means of dependency, such as chronic alcoholism and delinquency. They have little or no guilt, and are openly parasitic on their parents, wives or society.

In one British army hospital the majority of 340 ulcer patients were placid, unobtrusive or slovenly.[15] In many cases there was a remarkable coincidence between onset of distress and an unpleasant episode. Many seemed to exploit their defect. Subsidence of previously refractory symptoms tended to occur when discharge seemed assured. Recrudescence occurred, or the development of new symptoms, when they were told they would be returned to duty.

Davies reports that in 1937 a series of 205 patients reported the incidence of disturbing situations immediately previous to onset or exacerbation of symptoms in 84% of the cases. There was inability to rest in 78%.[16] Fifty patients suffering haematemesis reported that 47 of their

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14. Weiss, Edward, and O. Spurgeon English, Psychosomatic Medicine, p. 439.

15. Berk, J. Edward, and Alexander W. Frediani, Peptic Ulcer Problem in the Army in Gastroenterology, Vol.3, No. 6, issue of December 1944, p. 435-442.

16. Davies, Daniel T., and A.T. Macbeth Wilson, Personal and Clinical History in Haematemesis and Perforation in Lancet, Vol. 237, No. 2, issue of September 1939, p. 723-727.

58 bouts were preceded by emotional upsets. In 25 cases of perforation, an event of outstanding emotional significance occurred just before onset in 16 instances, e.g. the death of a husband or precipitation of mental illness in a wife.

Haematemesis increased in frequency in London in September 1939.[17] Thirty-eight cases were admitted to one group of hospitals in 4 months. In 28 of these, emphasis was put on the influence of strenuous work connected with air-raids and evacuation in 16, on unemployment and financial worries in 6, on heavier work with longer hours in 13, and on worry unrelated to the War in 9. In 3, no worries could be ascertained. Trauma seemed to be responsible in one case.

A significant increase in the number of perforations admitted to 16 London hospitals, during the first two months of heavy air-raids, was noted in September and October of 1940.[18] There was no significant change in age or

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17. Melton, G., Haematemesis and the War in Lancet, Vol. 238, No. 1, issue of February 17, 1940, p. 316-317.

18. Stewart, D.N., and W.M. de R. Winser, Perforated Peptic Ulcer in Lancet, Vol. 242, No. 1, issue of February 28, 1942, p. 259-261.

sex of patient, or site of the ulcer.

Statistics from the same hospitals for the period September 1940 to May 1941 show no change in age or sex of patient, but do indicate a significant increase in incidence over that of the previous three and following two years.[19]

In Glasgow, in the spring of 1941, coincident with heavy air-raids there, the number of perforations rose significantly.[20]

> The main group with haematemesis suffer from obsessional anxiety states or corresponding character disorders. Usually there is an aggressive independence which is fear-driven flight from the need for dependency. Precipitating factors are found in eighty per cent, events that are threats to security and independence or a sudden increase of responsibility. These events would disturb most people to a considerable extent - the unusual phenomenon in ulcer is merely an expression of emotional stress in gastric disturbance that is abnormal in type and degree.[21]

Szasz records the history of the peptic ulcer. First there is unconscious conflict between urges for dependence

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19. Spicer, C.C., D.N. Stewart and D.M. de R. Winser, Perforated Peptic Ulcer in Lancet, Vol. 246, No. 1, issue of January 1, 1944, p. 14.

20. Illingworth C.F.W., L.D.W. Scott and R.A. Jamieson, Perforated Peptic Ulcer in British Medical Journal, Vol. 2, issue of November 11, 1944, p. 617.

21. Wilson, A.T.M., ---------- in British Journal of Medical Psychology, Vol. 18, 1939, p. 112. Quotation in Practitioner, Vol. 145, No. 4, issue of October 1940, p. 272 of Psychological Medicine by T.M. Ling.

and independence. The dependent needs are frustrated because society demands an adult role. By regression security is equated with feeding and receiving, and the stomach by means of autonomic stimulation is kept in a state of preparation for food until morphological changes occur in its structure.[22]

Clinical records support the claim that psychogenic factors influence the onset and the course of the ulcerous condition.

In each of the chronic diseases that have been discussed in preceding chapters, the aetiology includes in a varying degree the influence of traumatic emotional strain, brief or prolonged. It will be ascertained whether or not psychoanalysts are of the opinion that there is any similarity in the specific dynamic patterns concerned.

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22. Szasz, Thomas S., Psychiatric Aspects of Vagotomy in Annals of Internal Medicine, Vol. 28, No. 2, issue of February 1948, p. 279-288.

Psychoanalysis

Examination of several reports of psychoanalyses that have been conducted on patients suffering from these chronic diseases will reveal the opinions of the psychoanalytic school concerning the aetiology of them.

Arthritis.

According to Alexander the disease has its roots in a restrictive overprotective parental influence in infancy.[1] Rebellion arises against this domination. It is sufficiently strong to produce a sense of anxiety, but is repressed because of the excessive dependency that has developed. It is indirectly and partially expressed, however, in various ways. During childhood and early adolescence there is participation in competitive sports and outdoor activities. In later life there is effected a combination of serving yet controlling the environment, and the rejection of the feminine role. If this successful pattern of both serving and controlling the environment is interrupted, an increase occurs in muscle tonus which develops into arthritis.

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1. Alexander, Franz, Psychosomatic Medicine, New York, Norton, 1950, p. 208-209.

In the immediate unconscious background is hostile masculine identification.[2] A woman may openly wish to be a man, or she may become the head of the house. She may take many lovers just to overcome and control them. Since she developed her dependency on a fear of a cold aggressive mother, by identification with her mother she is aggressive to men and to her own husband. The serving attitude is designed to placate the mother and to resolve the guilt feelings toward her. Suffering is to win the mother's love in which she never was secure. If the avenues for discharge of hostility are closed, the muscle system that was being utilized to relieve the tension becomes tense and strained. The tonus is increased. When the avenues are opened up again the arthritis which has developed tends to subside.

Asthma.

The asthmatic attack occurs as a reaction to the danger of separation from the mother or loss of her love.[3] The situation seems to result from indecision and conflict between the urge to cling and the temptation to separate from her. The

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2. Johnson, Adelaide, Louis B. Shapiro and Franz Alexander, Preliminary Report on a Psychosomatic Study of Rheumatoid Arthritis in Psychosomatic Medicine, Vol. 9, No. 5, issue of September 1947, p. 295-300.

3. Gerard, Margaret W., Bronchial Asthma in Children in The Nervous Child, Vol. 5, 1946, p. 327-331. Reprinted in Studies in Psychosomatic Medicine by Franz Alexander and Thomas Morton French, New York, Ronald Press, 1948, p.243-248.

situations stimulating the fear of loss are either the prospect of actual separation, or a temptation situation in which repressed impulses of which the mother disapproves threaten to break through and thus estrange her. The most dangerous impulses are those of hostility to the mother or to rivals such as siblings, urges for independence or sexual impulses. Defences against the fear are various; they include the utilization of suffering to gain sympathy, repetition of the traumatic event, and withdrawal into the protection of dreams and phantasies. Attacks of asthma occur when these defences break down. Such usually disintegrate when the danger of losing the mother becomes acute or when the threat of estrangement takes the patient by surprise.

Although the patients are alike in their dependent attitude toward maternal figures, their character structure can vary considerably. They may be argumentative and aggressive, daredevils, or hypersensitive aesthetes.[4] All have the wish to be protected.

Diabetes.

The patient has some basic conflict related to the acquisition of food and this is reflected in exaggerated

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4. Alexander, Franz, Psychosomatic Medicine, p. 133.

aggressive oral incorporative tendencies.[5] These are manifested in an exaggeration of identification with the mother and may produce impaired sexual development. In the male this results in an intensification of basic bisexuality; in the female, defences are activated against feminine sexuality, especially with regard to propagative functions.

Patients have unusually strong tendencies to receive and be cared for. Their attitude[6] is infantile, dependent and demanding. Since it is out of proportion to the hard facts of reality and can not be adequately satisfied, frustration necessarily results. In company with it develops diabetes as the result of the conflict , marking an old anxiety that they may lose love and security.

Because they always have had difficulty in making the adjustment from a dependent state to a mature independent one,[7] they vacillate from one attitude to the other. The impulse toward independence is asserted in words but only very little in action. Their major characteristic is indecisiveness, and the Ego function so weak that they

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5. Alexander, Franz, Psychosomatic Medicine, p. 196.

6. Meyer, Albrecht, Ludolf N. Bollmeier and Franz Alexander, Correlation Between Emotions and Carbohydrate Metabolism in Two Cases of Diabetes Mellitus in Psychosomatic Medicine, Vol. 7, No. 6, issue of November 1945, p. 335-341.

7. Mirsky, I. Arthur, Emotional Factors in the Patient with Diabetes Mellitus in Bulletin of the Menninger Clinic, Vol. 12, No. 6, issue of November 1948, p. 187-194.

suffer intense anxiety until the disease appears.

Nearly 75% of diabetics are obese, reacting to the present frustration by regressing to behaviour found gratifying in the past. When they were dependent for food on some other person, food became associated with warmth, support, and the soothing aspects of the individual who provided the food. Eating became a means of relief from tension and of acquiring affection.

If the conflict between their infantile wishes and the demands of the environment increases in severity, the glycosuria increases. Conversely, the latter decreases as they withdraw into self-pity and passivity.

Hypertension.

A state of dependency, early in life, arouses hostile competitive tendencies.[8] Retaliation by rivals and experiencing failure produces an increase in the dependent longings to the degree that feelings of inferiority are engendered. As a defence against these, the hostile competitiveness is reactivated. This produces anxiety so that the aggressive behaviour is henceforth inhibited. Such a course in predisposed persons places a strain on the

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8. Alexander, Franz, Psychosomatic Medicine, p. 153.

smooth muscles of the body, particularly those of the vascular system. This results in hypertension.

Alexander thus implies that a typical family background is not necessary to initiate this course of events. Any of a variety of past experiences may result in dependency and subsequent hostility.

Numerous analysts have discovered however that these patients usually have lacked adequate parental love and affection, through neglect or over-protection.[9] Helplessness, fear and anxiety developed. The hostile feelings were repressed in order to establish a dependent attachment to one or both parents without the risk of parental disapproval of their aggression. During their later childhood they continued obedient and submissive.

Saul emphasizes the oral dependency toward a dominating mother, and the chronic unsatisfied rebellion and hostility in this submission.[10] These are near consciousness but not expressed from the fear of the loss of love. Their attempts at escape fail and they remain perpetually boiling with rage, because they can not obtain the desired oral dependent gratification.

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9. Robbins, Lewis L., Psychological Factors in Essential Hypertension in Bulletin of the Menninger Clinic, Vol. 12, No. 6, issue of November 1948, p. 195-202.

10. Saul, Leon J., Hostility in Cases of Essential Hypertension in American Journal of Psychiatry, Vol. 95, No. 6, issue of May, 1939, p. 1449-1454.

The opposing tendencies of aggression and submission stimulate and block each other. The more they give in to their dependent compliant tendencies, the greater becomes their hostility toward those to whom they submit.

Thyrotoxicosis.

In both male and female patients a threat to security in early childhood or infancy appears to be the dynamic nucleus of the personality pattern that develops. [11] Fear and anxiety tends to create marked dependence upon parental figures, but this need is frustrated either by fate or by parental attitudes. Therefore they make a desperate attempt to identify themselves with one of the parents prematurely. The identification is beyond their physiological and psychological capacity, and results in a persistent struggle to master the insecurity. This is noted in the struggle to live up to maternal standards, or the effort to assume responsibility.

Conrad found that a significant number of patients lost their mother during early infancy, especially during childbirth. [12] Three of the females and some of the males

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11. Alexander, Franz, Psychosomatic Medicine, p. 177.

12. Conrad, Agnes, The Psychiatric Study of Hyperthyroid Patients in Journal of Nervous and Mental Disease, Vol. 79, No. 5, issue of May 1934, p. 505-529.

revealed excessive dependence upon their mothers, and consequent poor psychosexual development.

Throughout adult life their effort is continued toward obtaining self-sufficiency and toward binding others to them by helping them. If the striving fails thyrotoxicosis becomes evident: it is explained by the fact that the anxiety induced in childhood could not be alleviated by dependence.

Other sources of fear and insecurity can be responsible for the illness. These include an unhappy marriage of the parents, instability of personality in one of the parents, parental rejection, extreme forms of economic stress made even more severe by the birth of another sibling.[13]

Tuberculosis.

Coleman reports the analysis of a 43 year old female. Rejected and abused by her parents, she developed extreme dependency, resentment, and hatred of anyone who did not give her sufficient gratification.[14] She required a long

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13. Alexander, Franz, Psychosomatic Medicine, p. 178.

14. Coleman, Jules V., Allan Hurst and James S. Whedbee, Tuberculosis and Dependency in Psychosomatic Medicine, Vol. 12, No. 3, issue of May 1950, p. 189-198.

period of working through the feeling of being abandoned.

The analyses of three patients reported by Jelliffe conclude with the description that these were childish, selfish, self-centred, irritable, easily angered or pleased, capricious with their food, dissatisfied, and ungrateful.[15] The writer saw no evidence that these characteristics would be found in other tuberculous patients. Two of them, young males, were like Coleman's patient in being very dependent on their mothers. The third, a young woman, had remained immature in her sexual attitudes.

Peptic Ulcer.

The frustration of oral-receptive longings produces an aggressive response. This arouses guilt feelings and anxiety. To compensate for the feelings of dependency the patient undertakes and successfully responsible activities. The reaction to this excessive effort and concentration is an increase in the dependent cravings. Gastric hypersecretion occurs and an ulcer develops.[16]

The wish to remain in the dependent infantile situation - to be loved and cared for - is in conflict with the

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15. Jelliffe, Smith Ely and Elida Evans, Psychotherapy and Tuberculosis in American Review of Tuberculosis, Vol. 3, No. 7, issue of September 1919, p. 417-432.

16. Alexander, Franz, Psychosomatic Medicine, p. 115.

adult's aspiration for independence, accomplishment and self-sufficiency. The latter is expressed in overt behaviour as the acceptance of responsibilities, and the declining of help from others; the former, not openly expressed, is carefully hidden from the patient and is the unconscious stimulus to hypersecretion.[17] As the eventual result of rejection or spoiling in childhood, a wish to be loved becomes converted into the wish to be fed, a nd the stomach responds continually as if food were being ingested.

The cases reported by Bacon were all dependent and emotionally quite immature.[18] Like so many others of their type, the two females rejected femininity and the male did not marry.

Summary.

In the statements of psychoanalysts who have studied patients suffering from chronic disease, the tendency of such individuals toward dependency is further confirmed. It would be of interest to know to what degree this infantile attitude expresses itself in actual aberrant behaviour.

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17. Alexander, Franz, Psychosomatic Medicine, p.102.

18. Bacon, Catherine, Typical Personality Trends and Conflicts in Cases of Gastric Disturbance in Psychoanalytic Quarterly, Vol. 3, No. 4, issue of October 1934, p. 553-557.

The observations of clinicians will be utilized to assess the extent to which nervous symptoms occurring during the course of chronic disease are conspicuous.

Arthritis.

In one large group of patients there was a family history of nervousness in 35% of the cases.[1] There was a relatively high percentage of chronic alcoholic addicts in the background, about 6%. Twenty-five per cent of the patients reported having had "nervous breakdowns." Anxiety neurosis was generally present.[2]

Preceding the overt onset of the disease, there was in some depression, impaired power of concentration, withdrawal of interest, feelings of futility and unreality.[3] Two thirds of the patients revealed schizoid features and morbid anxiety.

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1. Dunbar, Flanders, Psychosomatic Diagnosis, New York, Paul B. Hoeber, 1943, p. 374.

2. --------, Psychosomatic Diagnosis, p. 385.

3. Halliday, J.L., Psychological Factors in Rheumatism in British Medical Journal, Vol. 1, issue of January 30, 1937, p. 213-217.

There were some in whom a hysterical trend was strong. With placid, smiling faces that were pathologically free from anxiety they displayed la belle indifference.[4]

In many the symptoms of depression became less marked when the arthritis actually developed.[5]

This alteration of symptoms is confirmed in rather a reverse fashion by the report of Gregg. In 3000 autopsies the State Pathologist of Massachusetts noted no frank arthritic joints.[6] It would seem that the severity of mental symptoms varies indirectly with the severity of the arthritis.

In the early stage the disease process is reversible, fluctuating in intensity with the tension felt by the patient.[7]

Asthma.

The disease is a neurosis of the respiratory tract,

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4. Halliday, J.L., The Psychological Approach to Rheumatism in Proceedings of the Royal Society of Medicine, Vol. 31, issue of November 19, 1938, p. 167-178.

5. Thomas, Giles W., Psychic Factors in Rheumatoid Arthritis in American Journal of Psychiatry, Vol. 93, No. 3, issue of November 1936, p. 693-710.

6. Gregg, Donald, The Paucity of Arthritis Among Psychotic Cases in American Journal of Psychiatry, Vol. 95, No. 4, issue of January 1939, p. 853-858.

7. Cobb, Stanley, and Henry H.W. Miles, Psychiatric Conference in American Practitioner, Vol. 3, No. 7, issue of March 1949, p. 407-411.

a part manifestation of a general psychopathic constitution. It is accompanied by other psychopathological conditions, partly causal, partly secondary.[8] Osler described it in his first edition as "a neurotic affliction."[9]

Dunbar notes disturbances of sexuality involving alienation from the feminine role in women, and feminine identification in men.[10] This is present in all neuroses. There are few protective rituals or phobias except in the periods of freedom from physical symptoms. Ambivalence does not separate them from reality as in schizophrenia; they are in an in-between stage, on the way to schizophrenia.

Brown refers to the attack as a hysterical conversion, with paranoid features.[11]

Diabetes.

In one large group there was a family history of

8. Reichmann, Frieda, Zur Psychopathologie des Asthma in Med. Klin., Vol. 18, 1922, p. 1066-68. Quoted by Flanders Dunbar, Emotions and Bodily Changes, New York, Columbia University, 1946, p. 249.

9. Eyermann, Charles H., The Emotional Component of Bronchial Asthma in Journal of Allergy, Vol. 9, No. 6, issue of September 1938, p. 565.

10. Dunbar, Flanders, Psychosomatic Notes Relating to the Neuroses of Asthma and Hay Fever in Psychoanalytic Quarterly, Vol. 7, No. 1, issue of January, 1938, p. 25-38.

11. Brown, Esther Allan, and Lionel Goitein, Some Aspects of Mind in Asthma and Allergy in Journal of Nervous and Mental Disease, Vol. 98, No. 6, issue of December 1943, p. 536-67.

nervousness in 24 % of the cases.[12] Seven per cent were exposed to nervousness in friend or spouse. Nearly one tenth reported insanity in the family, and the family history of alcoholism was high, 5.6%. The patients were nervous and inaccessible, with a tendency to hysteria or depression.[13] Dislike of sex and children was prominent. Anxiety and indecision were very obvious. Many of the character traits were suggestive of schizophrenia with cyclothymic tendencies.[14] One patient developed diabetes subsequent to an apparent "cure" of schizophrenia.

The actual number of psychoses is rare.[15] Hypochondriasis on the contrary is very frequent.

Daniels regards the diabetic as expressing either overtly or in concealed fashion chronic anxiety; in addition he is often suffering reactive depression.[16]

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12. Dunbar, Flanders, Psychosomatic Diagnosis, p.484.

13. --------, Psychosomatic Diagnosis, p. 493.

14. --------, Psychosomatic Diagnosis, p. 515.

15. Menninger, William C., The Inter-relationships of Mental Disorders and Diabetes Mellitus in Journal of Mental Science, Vol. 81, No. 333, issue of April 1935, p. 332-357.

16. Daniels, George E., Emotional and Instinctual Factors in Diabetes Mellitus in American Journal of Psychiatry, Vol. 93, No. 3, issue of November 1936, p. 711-724.

Hypertension.

In one series three quarters of the patients gave a family history of nervousness. Four per cent had parents who had been committed to mental institutions.[17] The patients were neurotically compulsive, generally repressed with occasional outbursts of aggression.[18]

From adolescence to middle life the males often show signs of neurocirculatory asthenia.[19] As adults they experience acute anxiety states, tension states, depression, and preoccupation with ideas of illness, injury, and death.[20]

Emotional fluctuations may be paranoid with increased irritability.[21]

Riemer studied 5 cases, four of which were prematurely thrown into situations of self-reliance and were distinctly schizoid in nature.[22]

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17. Dunbar, Flanders, Psychosomatic Diagnosis, p. 252.

18. -------, Psychosomatic Diagnosis, p. 260.

19. Barach, Joseph H., The Constitutional Factors in Hypertensive Disease in Journal of American Medical Association, Vol. 91, No. 20, issue of November 17, 1928, p. 1511-1514.

20. Robbins, Lewis L., Psychological Factors in Essential Hypertension in Bulletin of the Menninger Clinic, Vol. 12, No. 6, issue of November 1948, p. 195-202.

21. Mayer-Gross, W., Psychoses Associated With Hypertension, Arteriosclerosis and Heart Failure in Journal of Mental Science, Vol. 83, No. 346, issue of September 1937, p. 551-561.

22. Riemer, Morris D., Psychoses Associated With Essential Hypertension in Psychiatric Quarterly, Vol. 15, No. 2, issue of April 1941, p. 284-295.

Pernicious Anaemia.

Of 11 cases over half gave a family history of psychopathy. All were irritable, and suspicious.[23]

The type of psychosis that develops most frequently is paranoid, with delusions of persecution especially against the persons responsible for nursing care.[24] Delirium may occur which is most marked at night. Hallucinations are terrifying, producing extreme agitation.

Rheumatic Heart Disease.

Dunbar reports a group in which there was a family history of nervousness in 36% of the cases, including 12% institutional cases and suicides.[25] Exposure to nervousness and sudden death was high. Suicides in husbands occurred in about 4%.

Resentment against the parents is replaced by fear that is almost hypnotic in character.[26]

Reaction formations are mainly against a sense of inadequacy. Phobias persist, especially claustrophobia and

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23. Barrett, Albert Moore, Mental Disorders Associated with Pernicious Anaemia in American Journal of Insanity, Vol. 69, No. 5, 1913, p. 1063-1078.

24. Phillips, N.R., Mental Disorders Associated with Pernicious Anaemia in Journal of Mental Science, Vol. 77, No. 318, issue of July 1931, p. 549-554.

25. Dunbar, Flanders, Psychosomatic Diagnosis, p. 416.

26. --------, Psychosomatic Diagnosis, p. 420.

agoraphobia.

Especially in the more insidious type of the disease with little symptomatology, mental symptoms may appear that seem indicative of schizophrenia.[27]

There is fear of sex and marriage and a martyr tendency.[28]

Patients suffer anxiety attacks frequently, and tend to deny the existence of their illness.[29]

Thyrotoxicosis.

Hysteria is associated from early stages, evidenced by anaesthesia, and paralysis at times. There is acute anxiety, phobias and obsessions,[30]

The condition is found in many of the 2% of the military personnel becoming neurasthenic during the recent World War.[31] Many cases of neurocirculatory asthenia are known to be thyrotoxic in origin.

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27. Rochas, A., and G. Vile, The Problem of Rheumatic Disease and its Relation to Mental Diseases in Rev. Chilena de Neuro-Psiquiatria, Vol. 1, 1947, p. 133-140. Abstract in Journal of American Medical Association, Vol. 138, No. 8, issue of October 23, 1948, p. 598.

28. Dunbar, Flanders, Psychosomatic Diagnosis, p.424.

29. --------, Psychosomatic Diagnosis, p. 422.

30. Conrad, Agnes, The Psychiatric Study of Hyperthyroid Patients in Journal of Nervous and Mental Disease, Vol 79, No. 5, issue of May 1934, p. 505-529.

31. Ginsburg, Solomon, Masked Thyrotoxicosis Simulating Primary Neurosis in Journal of Nervous and Mental Disease, Vol. 76, No. 4, issue of October 193-, p. 331-359.

Depressive states are common.[32]

Psychoses occur in less than one per cent of all cases.[33] The most usual type is manic-depressive psychosis.

Tuberculosis.

Anxiety neurosis is found more commonly in the males; in the females the disturbance is a fatigue neurosis.[34]

Association with neurasthenia is so frequent that by some every neurasthenic is suspected of being tuberculous.[35]

Brown believes that the psychoses predispose to tuberculosis, although opinion is not unanimous on this question.[36] The relationship with schizophrenia has been not completely settled, although at St. Elizabeth's Hospital tuberculosis is three times as prevalent among the schizophrenics as it is in all the other groups put together.

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32. Johnson, W.O., Psychosis and Hyperthyroidism in Journal of Nervous and Mental Disease, Vol. 67, No. 6, issue of June 1928, p. 558-566.

33. Bram, Israel, Exophthalmic Goitre and Psychosis in Journal of Nervous and Mental Disease, Vol. 86, No. 2, issue of August 1937, p. 152-161.

34. Forster, A.M., and Charles E. Shepard, Abnormal Mental States in Tuberculosis in American Review of Tuberculosis, Vol. 25, No. 3, issue of March 1932, p. 324-333.

35. Brown, Lawrason, The Mental Aspect in the Etiology and the Treatment of Pulmonary Tuberculosis, in International Clinics, Vol. 3, 43rd Series, 1933, p. 149-174.

36. --------, op. cit., p. 149.

The schizophrenics have no protective ability, mentally or physically. They enjoy no delusional compensations. They form no fibrous tissue to make the tuberculous infection proceed more slowly or become chronic.[37] In apparently normal cerebro-spinal fluid from these patients, technicians claim that by the culture methods T.B. bacilli can be found in about 40% of cases.[38]

Peptic Ulcer.

Anxiety neurosis is frequently seen in the patient concurrently with the ulcer, sequentially or alternately.[39] A family pattern of tension may express itself in different members of the family as anxiety neurosis or as ulcer.

The majority of 75 cases at a U.S. Army Hospital had anxiety neurosis, generally concerned with their ability to adjust to service. Anxiety symptoms usually persisted until discharge was assured.[40]

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37. Lewis, Nolan D.C., A Discussion of the Relation-of the Chemical, Physical and Psychological Aspects of the Personality in Psychoanalytic Review, Vol. 11, No. 4,issue of October 1924, p. 403-414.

38. Loewenstein, Ernst, Tubercle Bacilli in the Spinal Fluid of Dementia Praecox in Journal of Nervous and Mental Disease, Vol. 101, No. 6, issue of June 1945, p. 576-582.

39. Cathcart, J.P.S., The Emotions in Gastro-intestinal Disturbances in Canadian Medical Association Journal, Vol. 55, No. 5, issue of November 1946, p. 465-470.

40. Flood, Charles A., Peptic Ulcer at Fort George G. Meade, Md., in War Medicine, Vol. 3, No. 2, issue of February 1943, p. 160-170.

Summary.

Neurotic states may develop before or during the overt manifestation of chronic disease. At times they are clinically indistinguishable from the psychoneuroses. At times they may alter in their severity in response, presumably, to physical changes in the patient. At times they may supplant the physical signs and symptoms.

Since the relationship between chronic disease and disturbed mental states appears to be close, inquiry will be made regarding points of similarity between them.

PSYCHOLOGY- Neuroses and Psychoses

Beginning with the psychoneuroses in this comparison, it may be said that the common symptoms are very similar to those associated with chronic disease. They include fatigue on slight exertion, respiratory difficulties, palpitation, polyuria, constipation or diarrhoea, dyspepsia, headache, and menstrual disturbances.[1] In addition there may be poor concentrative power, memory disturbances, feelings of inferiority, and signs of clinging dependence.

Hadfield has estimated the importance of the etiological factors as follows - physical 20%, constitutional as 30%, psychological predisposition 40%, psychological precipitating cause 10%.[2] In 100 cases the physiogenic factors were responsible to the extent of 30%, and psychogenic factors 70%. A larger group of 326 patients showed a predisposition of constitutional or acquired type in 82%, and apparently no predisposition in 18%.[3] In 69% the predisposition was evident in early childhood before puberty. Later more thorough investigation indicated that only 3

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1. Brillinger, H. Roy, Let Us Be Practical About the Psychoneuroses in Canadian Medical Association Journal, Vol. 61, No. 2, issue of August 1949, p. 99-103.

2. Hadfield, J.A., War Neuroses Part 2 in British Medical Journal, Vol. 1, issue of March 7, 1942, p. 320-323.

3. --------, War Neuroses Part 1 in British Medical Journal, Vol. 1, issue of February 28, 1942, p.281-5.

per hundred had no psychological predisposition.

A statistical study of neurotic University students suggests that mental illness in the family and conflict in the family are two important factors.[4] Separation of parents was more disturbing than the death of a parent. The size of the family, sibling favouritism or the presence of extra relatives living in the home did not appear significant. One half the subjects had experienced rejection by a parent, and three quarters of them considered their marriages disturbed.

In 200 cases admitted to a U.S. Army Hospital in the South Pacific, the most important factor in their breakdown was a disturbed family background.[5] This was reported as normal in 4%, slightly disturbed in 25%, moderately disturbed in 42%, and severely disturbed in 29%. There was a mutually dependent neurotic relationship between the mother and child in many instances.

Predisposition was regarded as of paramount importance in 1000 cases from a Women's Service. The emotionally immature and over-dependent in particular withstood badly separation from home, and anxiety arising on this score was

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4. Ingham, Harrington V., A Statistical Study of Family Relationships in Psychoneurosis in American Journal of Psychiatry, Vol. 106, No. 2, issue of August 1949, p. 91-98.

5. Henderson, J.L., and Merrill Moore, The Psychoneuroses of War in New England Journal of Medicine, Vol. 230, No. 10, issue of March 9, 1944, p. 273-278.

extremely common.[6]

Analysis was made of 92 psychosomatic casualties from the British armies of the Middle East, to find the "theme situation" responsible for the illness.[7] In nearly all there were situations in early childhood in which the patient could not deal with aggressive impulses. These had been aroused by a threat to the safety of the emotional relationship with a parent or the parent-substitute. With repression of aggression came guilt feelings, inadequacy and feelings of inferiority. It was concluded that the primary cause of their indisposition was separation from home and family; the primary predisposing cause was their poor home environment.

In the Canadian Army during the same period the opinion of experts did not differ.[8]

> During the past four years, my work was with men who failed the test of war. . . . These thousands who failed were weighed by competent observers, who delved into their past environment, into their childhood reactions and into their family lives. With rare exceptions, the minor disorders of personality which pre-

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6. Ballard, S.I., and H.G. Miller, Psychiatric Casualties in a Women's Service in British Medical Journal, Vol. 1, issue of March 3, 1945, p. 293-295.

7. Torrie, Alfred, Psychosomatic Casualties in the Middle East in Lancet, Vol. 246, No. 1, issue of January 29, 1944, p. 139-143.

8. McLean, Alexander R., No Disease in Canadian Medical Association Journal, Vol. 56, No. 3, issue of March 1947, p. 321-324.

vented these individuals from performing their military duty to their country, could, with varying degrees of effort, be traced to broken homes, unhappy family lives and unstable fathers and mothers.

Careful study of all these cases showed that inherited or early acquired predisposition was present in a large proportion, and that many had experienced difficulties in adjustment prior to enlistment.[9] There was the persistance of an exaggerated degree of the emotional dependence of early life. Factors determining predisposition to breakdown included life-long timidity, mental deficiency, physical weakness, the insecurity and inferiority resulting from up-bringing in homes where parents were incompatible, divorced, temperamentally unstable or alcoholic. The precipitating psychic trauma was considered to be relatively of small importance.

The significance of all psychoneuroses, civilian as well as military, can be appreciated on studying Fairbairn's conclusions.[10]

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9. Hyland, H.H., Psychoneuroses in the Army Overseas in Canadian Medical Association, Vol. 51, NO. 4, issue of October 1944, p. 307-309.

10. Fairbairn, W. Ronald, The War Neuroses: Their Nature and Significance in British Medical Journal, Vol. 1, issue of February 13, 1943, p. 183-186.

> I have gradually found myself driven to the conclusion that all psychopathological developments in the adult are ultimately based upon a persistance into later life of an exaggerated degree of that emotional dependence which is characteristic of childhood, and more particularly of infancy. The all-round dependence which distinguishes childhood requires little emphasis. . . . even under the most favourable of conditions there is always a certain conflict between a progressive urge to abandon the state of infantile dependence on account of the many limitations which it imposes and a regressive urge to cling to it on account of the many advantages which it confers. Where conditions are unfavourable this conflict assumes exaggerated proportions, is accompanied by marked anxiety, and gives rise to exaggerated reactions. . . . it is the undue persistance of such an attitude of infantile dependence that I have come to regard as the ultimate factor predisposing to all psychopathological developments; and in conformity with this view, all psychoneurotic and psychotic symptoms must be interpreted as essentially either effects of or defences against the conflicts attendant upon a persistent state of infantile dependence.

In the psychotic state of schizophrenia there is, as in the psychoneuroses, indication of autonomic imbalance.[11] It is believed, as in the psychoneuroses, that the disease occurs more frequently in some families than it does in the general population. Among the latter group the average expectancy of developing the disease is 0.85%; in children of one schizophrenic parent the probability is 16.4%; in the brothers and sisters of a schizophrenic the probability is 14%; in the other partner of a set of

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11. Weiss, Edward, and O. Spurgeon English, Psychosomatic Medicine, Philadelphia, W.B. Saunders, 1949, p.496.

fraternal twins probability is about 14%, but in a set of identical twins it is at least 85.8%; in the parents of a schizophrenic the probability is approximately 10%.[12]

The parent-child relationship was reviewed in 79 cases.[13] In 60 (76%) the mother was the dominant parent. In 10 (13%) the mothers were overtly rejecting. In 50 (63%) the mothers were covertly rejecting, and over-protective. In 12 (15%) the fathers were rejecting, domineering and sadistic. In 7 (9%) the pattern was not clear cut. Judgment concerning the incidence of rejection among the neurotics is that such is frequently less severe.

In 50 patients studied by Lidz, only 5 were brought up by stable and compatible parents. The number of broken homes was relatively high; the loss of a parent by death or separation was more frequent than would be expected on the average; upbringing was often bizarre.[14]

Menninger assesses the part played by heredity in the following words.

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12. Kellman, F.J., Modern Concepts of Genetics in Relation to Mental Health and Abnormal Personality Development in Psychiatric Quarterly, Vol. 21, No. 4, issue of October 1947, p. 535-553.

13. Reichard, Suzanne, and Carl Tillman, Patterns of Parent-Child Relationships in Schizophrenia in Psychiatry, Vol. 13, No. 2, issue of May 1950, p. 247-257.

14. Lidz, Ruth Wilmanns, and Theodore Lidz, The Family Environment of Schizophrenic Patients in American Journal of Psychiatry, Vol. 106, No. 5, issue of November 1949, p. 332-345.

> This has led many psychiatrists to believe that a special tendency to schizophrenia, some kind of hypersensitiveness at least, is transmitted by heredity. There is no proof of this, however. There is much proof that the injuries suffered by those individuals who later become schizophrenic occur very early in infancy. It may be the death of a mother, neglect or harshness by the mother in a form which she herself does not at all recognize, incessant quarreling between parents, hopeless rivalry with a much more popular or much more beautiful sister - all these things can do it, and many more which occur in the most gentle and kindly and affectionate of families.[15]

Many subsequent events reinforce the original injury. As a defence, the children deny the injury, and the pain they are suffering. Only a certain reticence, shyness or slight eccentricity may indicate it. With the repression tenseness, conflict, and great bitterness ensue. There is hatred toward the same people with whom external relations seem normal. Many potential schizophrenics never become patients and work very capably in the work-a-day world. Given new stresses their underlying bitterness may break through. Most commonly it will appear as chronic pain, in the abdomen or the back or in the head. An operation sometimes controls the attack.[16]

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15. Menninger, Karl A., Diagnosis and Treatment of Schizophrenia in Postgraduate Medicine, Vol. 2, No. 4, issue of October 1947, p. 278.

16. --------, The Diagnosis and Treatment of Schizophrenia in Bulletin of the Menninger Clinic, Vol. 12, No. 3, issue of May 1948, p. 96-106.

It would appear from this survey that the psychological factors that influence susceptibility to chronic disease also operate in an essentially similar manner to influence susceptibility to psychoneurotic and psychotic disease. In each instance there appears to be in the patient a predisposition of constitutional or acquired type. In each instance the early physical and mental symptoms may be identical.

Examination will now be made into the personality pattern revealed by patients suffering from anxiety states and depression. Comparison will then be possible with the profiles of patients with chronic disease.

Personality patterns revealed by patients suffering from Depression and from Anxiety states, on the administration of the Szondi test, are presented for comparison.

A. Anxiety.

1. The Sexual Vector.

Plus h.-- Subjects showed a need for tender love and affection, desiring to have contact passively and submissively with the love-object.

Minus s.-- A low level of physical activity was indicated. There was non-aggressive behaviour, with tendencies to masochism and feelings of inefficiency.

Plus h with minus s.-- Basically dependent, these sensitive individuals detached themselves somewhat from the material aspects of the world and showed increased interest in the conceptual symbolic representations of reality.

2. The Paroxysmal Vector.

Minus e.-- Since the tension resulting from the unaccepted need for aggression was not adequately discharged, subjects suffered violent outbursts of hostility at intervals.

Minus hy.-- Because of failure to express finer emotions, the need for this type of discharge existed under such tension as to create diffuse anxiety.

Minus e with minus hy.-- The entire emotional sphere was made tense by inadequate release of strong affects that accumulated.

3. The Schizophrenic Vector.

Minus k.-- Impulses that were unacceptable to the Superego were repressed from consciousness. The subjects not knowing their needs could not live them out.

Minus p.-- They projected their personality into the environment, tending to blame others for their own frustration.

Minus k with minus p.-- Conformity with the demands of the environment was substituted for living out individualistic needs.

4. The Contact Vector.

Plus d.-- With persistance they acquired material objects that they might control them, feeling at the same time depression when they considered their possible loss.

Plus m.-- In a dependent attitude they clung to their

love-objects for emotional support. They were optimistic that gratification could be secured and were capable of giving some affection in return.

Plus d with plus m.-- Objects were wanted so that they might be mastered as well as enjoyed. This was associated with a definite tendency for competitiveness, and feelings of inefficiency if too many tasks were undertaken to be successfully carried out.

Details of the Pattern

The dynamically strongest need is in the h factor. The greatest tension is therefore concerned with the acceptance or non-acceptance of tender love and affection.

There are no open factors. Adequate channels for the discharge of emotions do not exist.

There are no ambivalent factors. Conflicting tendencies are not subjectively experienced to the extent of forming a conscious source of disturbance.

There are four strong unconscious driving forces.

1. The need for tender love.
2. The need to control violent emotions.
3. The need to own and master objects.
4. The need to cling to objects for emotional support.

Plus h.-- On the average more h cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly stronger desire than normal to obtain tender love and affection.

Minus s.-- On the average significantly more s cards were chosen than by the controls. This indicates a tendency to inhibit aggression greater than normal.

Minus e.-- On the average more e cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly more tension than normal in the attempts to control aggressive emotions.

Minus hy.-- On the average fewer hy cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly less rigid control of the expression of emotions than is normal, with the possibility of developing symptoms of hysteria.

Minus k.-- On the average more k cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly greater repression from consciousness of unacceptable impulses than is normal.

Minus p.-- On the average more p cards were chosen than by the controls, but significance was not demonstrated.

This suggests a slightly stronger tendency than normal to blame the environment for one's frustration.

Plus d.-- On the average significantly more d cards were chosen than by the controls. This indicates a stronger urge than normal to possess material objects.

Plus m.-- On the average more m cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly greater desire than normal to obtain objects for the emotional support they provide.

B. Depression.

1. The Basic Pattern - The Sexual Vector.

Plus h.-- Subjects showed a need for tender love and affection, desiring to have contact passively and submissively with the love-object.

Plus s.-- The level of physical activity was slightly higher than normal, and the need for uninhibited aggressive behaviour in the face of conflict was consciously accepted.

Plus h with plus s.-- The sexual tension in this vector may be the cause of anxiety, since there are signs of repression in the other areas.

2. The Paroxysmal Vector,

Minus e.-- Since the tension resulting from the need for aggression was not adequately discharged, subjects suffered violent outbursts of hostility at intervals.

Minus hy.-- Because of failure to express finer emotions, the need for this type of discharge existed under such tension as to create diffuse anxiety.

Minus e with minus hy.-- The entire emotional sphere was made tense by inadequate release of strong affects that accumulated.

3. The Schizophrenic Vector.

Minus k.-- Impulses that were unacceptable to the Superego were repressed from consciousness. The subjects not knowing their needs did not live them out.

Minus p.-- They tended to blame objects of the environment for their own frustration, tending to become suspicious and to develop paranoid ideas.

Minus k with minus p.-- Conformity with the demands of the environment was substituted for living out individualistic needs.

4. The Contact Vector.

Plus d.-- With persistence they acquired material objects that they might control them, feeling at the same time depression when they considered their possible loss.

Minus m.-- Denying themselves the need to lean on others for support, they tended to withdraw in sadness from warm interpersonal relations.

Plus d with minus m.-- Although they aggressively mastered material objects of the environment, they derived no pleasure from the activity. Their attitude toward the world was one of pessimism.

Details of the Pattern.

The dynamically strongest need is in the h factor. The greatest tension is therefore concerned with the acceptance or non-acceptance of tender love and affection.

There are no open factors. Adequate channels for the discharge of emotions do not exist.

There are no ambivalent factors. Conflicting tendencies are not subjectively experienced to the extent of forming a conscious source of disturbance.

There are four strong unconscious driving forces.

1. The need for tender love.
2. The need to blame the environment for frustrations.
3. The need to own and master objects.
4. The need to deny the urge to lean on objects for emotional support.

Plus h.-- On the average significantly more h cards were chosen than by the controls. This indicates a stronger desire than normal to obtain tender love and affection.

Plus s.-- On the average more s cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly greater degree of aggressiveness than normal.

Minus e.-- On the average more e cards were chosen than by the controls, but significance was not demonstrated. This suggests slightly more tension than normal in the attempt to control aggressive emotions.

Minus hy.-- On the average fewer hy cards were chosen than by the controls, but significance was not demonstrated. This suggests a slightly less rigid control of the expression of emotions than is normal.

Minus k.-- On the average fewer k cards were chosen than by the controls, but significance was not demonstrated.

This suggests slightly less repression of impulses from consciousness than normal.

Minus p.-- On the average significantly more p cards were chosen than by the controls. This indicates a greater tendency than normal to blame the environment for one's frustration and to develop paranoid ideas.

Plus d.-- On the average significantly more d cards were chosen than by the controls. This indicates a greater urge than normal to acquire material objects for the sake of owning them.

Minus m.-- On the average significantly more m cards were chosen than by the controls. This indicates a stronger desire than normal to deny the need to lean on others for emotional support.

C. Summary.

The differences between the clinical groups, and their relative variations from normal, are noted. In each factor the group with the largest average number of choices is placed first and the groups are arranged in order.

Plus h - Depression, Anxiety, Controls

Plus s - Depression, Controls

Minus s - Anxiety, Controls

Minus e - Depression, Anxiety, Controls

Minus hy - Controls, Anxiety, Depression

Minus k - Anxiety, Controls, Depression

Minus p - Depression, Anxiety, Controls

Plus d - Anxiety, Depression, Controls

Plus m - Anxiety, Controls

Minus m - Depression, Controls

The clinical groups are alike in having inadequate means of discharging their emotional tensions, unconscious sources of conflict, and in revealing a strong unconscious drive to obtain tender love.

D. Comparisons.

Anxiety - the profile shows Plus h, Minus s, Minus e, Minus hy, Minus k, Minus p, Plus d, Plus m.

Depression - the profile shows Plus h, Plus s, Minus e, Minus hy, Minus k, Minus p, Plus d, Minus m.

1. The Anxiety State.

The profiles of patients suffering chronic diseases have certain features found in the profiles of patients suffering from anxiety states;(and of equal or greater intensity)

a) Arthritis - Plus h, Minus e, Minus hy, Minus k, Minus p, Plus d (6)

b) Muscle Tension - Plus h, Minus e, Minus k, Minus p, Plus d (5)

c) Pernicious Anaemia - Plus h, Minus hy, Minus k, Minus p (4)

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a) Asthma - Plus h, Minus hy, Minus k, Minus p, Plus m (5)

b) Chronic Chest - Plus h, Minus hy, Minus k (3)

c) T.B. - Plus h, Minus p (2)

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a) Diabetes - Plus h, Minus hy, Minus k, Minus p, Plus d (5)

b) Obesity - Plus h, Minus e (2)

c) Hypertension - Plus h, Minus k, Minus p (3)

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a) R.H.D. - Plus h, Minus hy, Minus k, Minus p, Plus d (5)

b) Thyrotoxicosis - Minus hy, Minus k, Minus p (3)

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a) Ulcer - Plus h, Minus e, Minus hy, Minus p (4)

b) Dyspepsia - Plus h, Minus hy, Minus k, Minus p, Plus m (5)

c) Alcoholism - Minus hy, Minus k, Minus p Plus m (4)

Depression - Plus h, Minus e, Minus p, Plus d (4)

The profiles for patients suffering from Arthritis, Asthma, Dyspepsia, Diabetes, Muscle Tension and Rheumatic Heart Disease, resemble most the profiles of patients suffering from anxiety states.

2. Depression.

The profiles of patients suffering chronic diseases have certain features that are found in the profiles of patients suffering from depression; (of equal or greater intensity)

a) Arthritis - Plus h, Minus e, Minus hy, Minus k, Plus d (5)

b) Muscle Tension - Minus hy, Minus k, Plus d (3)

c) Pernicious Anaemia - Plus h, Minus hy, Minus k, Minus p (4)

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a) Asthma - Plus h, Minus hy, Minus k, Minus p (4)

b) Chronic Chest - Plus h, Minus hy, Minus k (3)

c) T.B. - Plus h, Minus k, Minus m (3)

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a) Diabetes - Plus h, Minus hy, Minus k, Minus p, Plus d, Minus m (6)

b) Obesity - Minus k, Plus d, Minus m (3)

c) Hypertension - Plus h, Plus s, Minus hy, Minus k, Minus p, Plus d, Minus m (7)

a) R.H.D. - Plus s, Minus hy, Minus k, Minus p, Plus d (5)

b) Thyrotoxicosis - Minus hy, Minus k, Plus d (3)

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a) Ulcer - Plus h, Plus s, Minus e, Minus hy, Minus k (5)

b) Dyspepsia - Plus s, Minus hy, Minus k (3)

c) Alcoholism - Plus s, Minus hy, Minus k (3)

Anxiety State - Minus hy, Minus k, Plus d (3)

The profiles for patients suffering from Hypertension, Diabetes, Arthritis, Rheumatic Heart Disease, and Ulcer resemble most the profiles of patients suffering from depressions.

3. Other relationships.

Muscle Tension Chronic Chest Obesity Alcoholism	show fewer characteristics of the Anxiety Reaction profile than do those of	Profiles for Arthritis Asthma Diabetes, Hypertens. Ulcer
Muscle Tension Chronic Chest Obesity Dyspepsia Alcoholism	show fewer characteristics of the Depression profile than do those of	Arthritis Asthma Diabetes Ulcer

Dyspepsia profiles show more characteristics of the Anxiety Reaction profile than does that for Peptic Ulcer.

The profile for the controls was - Plus h, Plus s, Minus e, Minus hy, Minus k, Plus p, Minus d, Plus m.

The impression is obtained on inspection of the profiles, that those for Depression represent a greater deviation from normal than do those for Anxiety State. (Deviation in the direction of 4 factors as compared with 3).

CHAPTER IX

BODY RESPONSES IN CHRONIC DISEASE

It is proposed to indicate the disturbances of function that are apparent in chronic disease, including schizophrenia; to suggest how these disturbances arise in terms of Selye's General Adaptation Syndrome; and to show how the effectiveness of therapy is consistent with such a theory.

1. Response to stress.

Schilling has shown that the pain reaction threshold for psychoneurotic subjects is significantly lower than in a control group, although the pain perception thresholds are identical.[1]

The pain reaction threshold for patients with peptic ulcer is significantly lower than in a control group.[2]

In an experimental condition involving light work, psychoneurotic patients gave up trying to work before their

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1. Schilling, R.F., and Marc J. Musser, Pain Reaction Thresholds in Psychoneurotic Patients in American Journal of Medical Sciences, Vol. 215, No. 2, issue of February 1948, p. 195-197.

2. Schilling, R.F., and Marc J. Musser, Pain Reaction Thresholds in Patients with Peptic Ulcer in American Journal of Medical Sciences, Vol. 218, No. 2, issue of August 1949, p. 207-208.

physiological end point was reached. Compared with a group of controls they had effort phobia.[3]

2. Metabolism

The metabolic rate was increased under hypnosis by suggestion of anxiety and apprehension up to 22 per cent. Depression, elation, and irritability did not produce any increase.[4]

High basal metabolic rates in the neuroses in most cases are not due to hyperthyroidism. The latter is the direct consequence of, or rather the necessary response to, the mental state of the patient. Surgery only leads to hypertrophy of the remaining tissue.[5]

After ten years of research Hoskins reported in 1937 that the rate of oxygen consumption in schizophrenia lies within a significantly lower range than in normal people under the same environmental conditions.[6] The patients are commonly less responsive to thyroid administration than normal.

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3. Jones, Maxwell, Physiological and Psychological Responses to Stress in Neurotic Patients in Journal of Mental Science, Vol. 94, No. 395, issue of April 1948, p. 392-427.

4. Whitehorn, J.C., Helge Lundholm and G.R. Gardner, The Metabolic Rate in Emotional Moods Induced by Suggestion in Hypnosis, American Journal of Psychiatry, Vol. 9, issue of 1929-30, p. 661-666.

5. Levine, B.S., Basal Metabolic Rates in Some of the Psychoneuroses in Journal of Laboratory and Clinical Medicine, Vol. 8, issue of 1922-23, p. 775-789.

6. Hoskins, R.G., Oxygen Metabolism in Schizophrenia in Archives of Neurology and Psychiatry, Vol. 38, No. 6, issue of [illegible] Dec. 1937, p. 1261-79.

3. Oxygen consumption

By a study of respiratory tracings made in 5 successive periods, analysis was made of the rate, depth, minute respiratory volume, metabolic rate and spread of the expiratory-inspiratory angle. Neurotic patients were asked to think of pleasant ideas, unpleasant ideas, and again pleasant ones. The 29 patients with hysteria reacted with striking increases in the values during the unpleasant period. The 12 with hypochondria, depression and compulsion neurosis had no or very slight respiratory changes. The controls reacted more than the second group but less than the first.[7]

One hundred consecutive inspirations of 25 students and 25 schizophrenic patients were inspected from the pneumograph. The latter had a smaller volume of tidal air, and more regular breathing. Of the students, those with the smallest volume of tidal air were schizoid in type, and those with the largest were distinctly cyclothymic. The correlation between psychological and physiological criteria in the two types of students was .80 and .75.[8]

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7. Finesinger, Jacob E., Effect of Pleasant and Unpleasant Ideas on Respiration in Psychoneurotic Patients in Archives of Neurology and Psychiatry, Vol. 42, No. 3, issue of September 1939, p. 425-490.

8. Thompson, John W., and William Corwin, Correlations Between Patterns of Breathing and Personality Manifestations in Archives of Neurology and Psychiatry, Vol. 47, No. 2, issue of February 1942, p. 265-270.

4. Endocrine function

Rowe writes that in one group of 110 psychotics and 140 neurotics, three-quarters showed some disorder of the endocrine glands. Three-quarters of the schizophrenics had a disturbed pituitary function. All patients showed marked evidence of metabolic disturbances.[9]

Thyroid function was studied by the uptake of radioactive iodine in 24 mental patients and 12 controls. In all cases except that of one patient the results were within normal limits.[10] There was no change in the patients during or after insulin shoack, electro-shock, or psychotherapy. Thyroid medication, however, produced a profound alteration in 2 patients on whom this study was made.

5. Action of autonomic drugs

When injection of adrenaline was made, both schizophrenic patients and normal controls gave a somatic response by blood pressure, pulse rate, peristalsis, sweating, pallor, salivation, and lacrimation. This frequently was more intense in the schizophrenics although showing greater variability

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9. Rowe, Allan W., and Henry M. Pollock, Psychoses, Psychoneuroses and Endocrine Dysfunction in Endocrinology, Vol. 17, No. 6, issue of November 1933, p. 658-666.

10. Bowman, K. M., et al., Thyroid Function in Mental Disease Measured with Radioactive Iodine, I in American Journal of Psychiatry, Vol. 106, No. 8, issue of February 1950.

and wider range. Emotional response to the adrenaline was entirely lacking. There would seem to be a disorder of the emotional mechanism at a physiological level.[11]

Histamine was injected into 63 schizophrenics and 68 with non-schizophrenic psychoses. In the former the drug produced a significantly smaller response (i.e. a smaller rise) in the pressure of the cerebro-spinal fluid.[12]

6. Blood counts

Twenty-one psychotics and 11 controls were subjected to heat stress. All the normal subjects showed a drop in the lymphocyte count amounting to 24.5% of the pre-stress level. Twenty of the 21 patients showed an increased count, amounting to 24.2% of the pre-stress level. Two hours after the stress both groups had normal counts. In the control group the drop is attributed to adreno-cortical stimulation.[13]

Two doses of 50 Gm. Glucose were ingested by groups of normal and schizophrenic subjects. In the normals, the lymphocyte count and blood sugar level varied inversely.

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11. Dynes, J.B., and H. Tod, The Emotional and Somatic Response of Schizophrenic Patients and Normal Controls to Adrenalin and Doryl in Journal of Neurology and Psychiatry, Vol. 3, No. 1, issue of January 1940, p. 1.

12. Friedman, Emerick, and Thomas Thale, Effect of Autonomic Drugs on Cerebrospinal Pressure in Schizophrenic and Other Psychoses in Archives of Neurology and Psychiatry, Vol. 49, No. 3, issue of March 1943, p. 449-453.

13. Pincus, Gregory, and Fred Elmadjian, The Lymphocyte Response to Heat Stress in Normal and Psychotic Subjects in Journal of Clinical Endocrinology, Vol. 6, No. 4, issue of April 1946, p. 295-300.

Of the patients 43% showed an abnormal lymphopenic response. This seemed to indicate an adreno-cortical failure of a particular type.[14]

7. Carbohydrate tolerance

Meduna found that in 20 untreated schizophrenics there was delayed utilization of blood sugar in the form of intravenous glucose.[15]

Mentally disturbed soldiers with many varieties of psychological symptoms and 20 normals were injected with insulin. The patients showed a significantly less pronounced drop in the blood sugar level, which was equal in the 71 psychotics, 12 neurotics and 10 disturbed individuals.[16]

In patients treated with electro-shock there was a direct correlation between clinical improvement and an

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14. Freeman, Harry, and Fred Elmadjan, The Relationship Between Blood Sugar and Lymphocyte Levels in Normal and Psychotic Subjects in Psychosomatic Medicine, Vol. 9, No. 4, issue of July 1947, p. 226-232.

15. Meduna, L.J., F.J. Garty and V.G. Urse, Biochemical Disturbances in Mental Disorders in Archives of Neurology and Psychiatry, Vol. 47, No. 1, issue of January 1942, p. 38-52.

16. Freeman, H., Resistance to Insulin in Mentally Disturbed Soldiers in Archives of Neurology and Psychiatry, Vol. 56, No. 1, issue of July 1946, p. 74-78.

increase in glucose tolerance.[17]

8. Vascular System

When schizophrenic and normal subjects are exposed to heat, the former differ from normal in that as the level of blood pressure changed, a constant relationship remained between the levels of the diastolic and systolic pressures. The tonus of the blood-vessels tended to be the same for all the patients, and to differ considerably from one control subject to another. It would appear that in schizophrenia the vascular bed has lost its elasticity or that vascular changes occur uniformly through the organism. The oral and rectal temperatures rose twice as fast as in the controls - inadequate dissipation of heat seems to occur because of the static nature of the vascular bed.[18]

In arthritis, in the region of the tissue swelling, there is a definite increase in the number of capillaries. The temperature of the skin surface is lower than normal, and there is slow capillary blood flow.[19]

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17. Freeman, H., and R.N. Zaborenke, Relation of Changes in Carbohydrate Metabolism in Psychotic States in Archives of Neurology and Psychiatry, Vol. 61, 1949, p. 569.

18. Gottlieb, Jacques S., Relationship of the Systolic and Diastolic Blood Pressure in Schizophrenia in Archives of Neurology and Psychiatry, Vol. 35, No. 6, issue of June 1936, p. 1256-1261.

19. Kovacs, Joseph, The Surface Temperature and the Minute Blood Vessels of the Skin in Arthritis in Journal of American Medical Association, Vol. 100, No. 13, issue of April 1, 1933, p. 1018-1021.

In the great majority of schizophrenics there is decreased blood flow through the hand, although readings for the forearm and leg are normal or increased. Exposure of the extremity to local heat causes increased flow to the hand as great as in normal subjects.[20]

When dinitrophenol was administered to schizophrenic and normal subjects, the normals showed an increase in skin temperature, an increase in oxygen consumption and an increased evaporation rate. The patients showed much less reaction in each of these respects. Since the drug is not dependent on the intermediate activity of endocrine or nervous structures, the schizophrenic process must be widespread through the bodily tissue and not confined to the nervous system.[21]

These changes in function are examples of the many physiological disturbances that are evident in chronic disease. They are found in every body system.

The specific instances noted suggest the influence

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20. Abramson, David I., Norman Schkloven and Kurt H. Katzenstein, Peripheral Blood Flow in Schizophrenia and Other Abnormal Mental States in Archives of Neurology and Psychiatry, Vol. 45, No. 6, issue of June 1941, p. 973-79.

21. Freeman, H., Heat-regulating Mechanisms in Normal and in Schizophrenic Subjects in Archives of Neurology and Psychiatry, Vol. 43, No. 3, issue of March 1940, p. 456-462.

of stress on the autonomic and endocrine systems. It is important to note the overlapping that occurs between the reactions of patients with chronic disease, psychoneuroses and psychoses. The first group resemble the second in having an elevated metabolic rate, in a lower pain reaction threshold - they resemble the third group in disturbed vascular flow. The neurotics resemble individuals with chronic disease in some reactions, and the psychotics in such others as the disturbance in carbohydrate metabolism.

The examples might have been multiplied; they go to show that chronic disease, the psychoneuroses and the psychoses are alike in revealing a disturbed state of body chemistry and autonomic imbalance. They can not be divided into mental disease and organic disease. Each is made manifest in the patient by physical signs and by abnormal behaviour.

In each the autonomic nervous system, and the pituitary-adrenal system in particular, appears most disturbed.

The manner in which the adrenal cortex appears to function will be illustrated briefly. Of the corticoids concerned there are two chief types, the mineralo-corticoids represented by the action of Desoxycorticosterone Acetate (DCA), and the gluco-corticoids represented by the action of Cortisone. These in many respects exert antagonistic effects, and disease exists in the presence of a disturbed balance between them.

1. Arthritis.

Injection of formaldehyde into the vicinity of a joint produces a lesion of the rheumatoid type. Pretreatment with DCA increases the severity of the arthritis, and the previous administration of Cortisone or ACTH almost inhibits it.[1] (ACTH stimulates the adrenal cortex to secrete both types of corticoids). In the rat, mere overdosage with DCA will also produce an acute arthritis - with the occurr-

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1. Selye, Hans, Further Studies Concerning the Participation of the Adrenal Cortex in the Pathogenesis of Arthritis in British Medical Journal, Vol. 2, issue of November 19, 1949, p. 1129-1135.

ence of an excess of mineralo-corticoids in the circulation.[2] This is consistent with complaints of patients receiving DCA as treatment for Addison's disease that they experience discomfort in their joints.[3]

Hench reports that in man Cortisone has produced marked relief of the arthritis in 95% of treated cases.[4] The administration of ACTH has also produced a prompt remission of symptoms.[5] Further, the implantation of pituitary transplants has met with some success - 6 of the first 9 patients becoming symptom free.[6]

2. Asthma and Tuberculosis.

Mineralo-corticoids predispose to the development of lung oedema, congestion, and transudates, during the Alarm Reaction.[7] The anti-asthmatic effect, therefore, of the gluco-corticoids suggests that endogenous discharge of

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2. Selye, Hans, Stress, Montreal, Acta, 1950, p.390.

3. --------, op. cit., p. 391.

4. Hench, Philip S., Effects of Cortisone in the Rheumatic Diseases in Lancet, Vol. 259, No. 2, issue of October 21, 1950, p. 483-484.

5. Rogan, C., A.W. Grokoest and R.H. Boots, Effect of Adrenocorticotrophic Hormone (ACTH) on Rheumatoid Arthritis in American Journal of Medicine, Vol. 7, issue of December 1949, p. 741-751.

6. --------, Foreign Letters, Stockholm, May 14, 1950 in Journal of American Medical Association, Vol. 143, No. 8, issue of June 24, 1950, p. 759.

7. Selye, Hans, Stress, p. 642.

adrenal hormones may be a normal defence reaction against an allergic response to certain agents.

The administration of ACTH to 23 patients produced in the majority a complete remission.[8] Cortisone in 5 others was somewhat less effective. Attempts to secure relief from the disturbed body chemistry, without restoring any chemical balance, have consisted in attacking the nervous system by separating branches of the vagus,[9] or removing several of the dorsal sympathetic ganglia.[10] These have met with some success.

Gluco-corticoids interfere with the formation of encapsulating fibrous tissue.[11] In the therapy of tuberculosis, despite rapid transitory improvement, the X-ray indicates a greater tendency to cavitation and faster spread through the lung.[12]

3. Diabetes.

During the stage of Resistance animals exhibit a dia

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8. Carey, Richard A., The Effect of Adrenocorticotropic Hormone (ACTH) and Cortisone on the Course of Chronic Bronchitis and Asthma in Bulletin of Johns Hopkins Hospital, Vol. 87, No. 5, issue of November 1950, p. 387-399.

9. Blades, B., E.J. Beattie Jr., and W.S Elias, Surgical Treatment of Intractable Asthma in Journal of Thoracic Surgery, Vol. 20, issue of October 1950, p. 584-598.

10. Carr, Duane, and Hughes Chandler, Dorsal Sympathetic Ganglionectomy for Intractable Asthma in Journal of Thoracic Surgery, Vol. 17, No. 1, issue of February 1948, p. 1-12.

11. Selye, Hans, Stress, p. 648.

12. --------, Editorial, British Medical Journal, Vol. 2, issue of November 25, 1950, p. 1237.

betic type of glucose tolerance curve, and tend to become insulin resistant.[13] Adrenalectomy prevents a response to stress by an elevation of blood sugar; maintenance doses of cortical extracts produce the usual response to stress, in adrenalectomized animals.

Diabetes develops in man receiving large doses of ACTH.[14] It would appear that, in addition to decreasing renal tubular reabsorption of glucose, ACTH may produce alloxan-like metabolites that cause functional abnormalities in the islet cells of the pancreas. Thus, the sudden discharge of ACTH during stress might be a factor in initiating the onset of diabetes in persons genetically predisposed. Adrenal denervation has been done in a diabetic patient as an attempt to control the diabetes.[15] Bilateral adrenalectomy performed to decrease hypertension permitted in the same patient a great reduction in insulin requirements in treating co-incident diabetes.[16]

4. Hypertension.

Systemic stress causes a discharge of ACTH from the

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13. Selye, Hans, Stress, p. 265.

14. --------, op. cit., p. 263.

15. Rogaff, J.S., Addison's Disease Following Adrenal Denervation in Case of Diabetes Mellitus in Journal of American Medical Association, Vol. 106, No. 4, issue of January 26, 1936, p. 279-281.

16. Selye, Hans, op. cit., p. 266.

anterior lobe of the pituitary.[17] The effect of long administration of DCA to patients with Addison's disease is to elevate the blood pressure.[18] Conversely, Perera reports the case of a patient whose blood pressure remained definitely lower as long as she was receiving Cortisone.[19]

Some workers have observed an increase of the ACTH content of the blood in hypertensive patients.[20]

The attempt has been made to relieve the condition by irradiation of the pituitary and adrenal glands, thus reducing the secretion of cortical extracts.[21] Although patients report subjective improvement, the objective improvement as revealed by a permanent lowering of blood pressure has not been too successful.

5. Pernicious Anaemia.

During stress there appears to be depression of red

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17. Selye, Hans, Stress, p. 561.

18. Perera, G.A., et al., Effect of Desoxycorticosterone Acetate on the Blood Pressure of Man in Journal of American Medical Association, Vol. 125, No. 15, issue of August 12, 1944, p. 1030-1035.

19. --------, Cortisone in Hypertensive Vascular Disease in Journal of Clinical Investigation, Vol. 29, issue of June 1950, p. 739-745.

20. Selye, Hans, op. cit., p. 565.

21. Best, Maurice M., et al., Irradiation of the Pituitary Gland in Hypertensive Vascular Disease in American Journal of Medical Sciences, Vol. 219, No. 3, issue of March 1950, p. 276-280.

cell formation, and the red bone-marrow tends to turn into inactive gelatinous bone-marrow.[22]

Witts has gathered a series of cases in which pituitary deficiency was associated with achlorhydria and an anaemia, usually of the Pernicious Anaemia type.[23]

Where ACTH was administered to 16 patients with anaemia, some of which was of the Pernicious Anaemia variety, new red blood cell formation occurred irregularly in half the cases.[24]

6. Rheumatic Heart Disease.

Overdosage with DCA in animals produces nodule-like granulomas in the heart and vascular lesions resembling rheumatic arteritis; rather specific granuloma tissue also tends to develop in the lungs.[25] Levine states that the endocrines may have a significant bearing on whether a given patient will suffer a rheumatoid or cardiac bout following a particular infection.[26]

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22. Selye, Hans, Stress, p. 487.

23. Witts, L.J., Pernicious Anaemia and Pituitary Insufficiency in Lancet, Vol. 243, No. 11, issue of September, 1944, p. 307-308.

24. Wintrobe, Maxwell M., ACTH and Cortisone in Hematologic Disorders in American Journal of Medicine, Vol. 9, No. 6, issue of December 1950, p. 715-717.

25. Selye, Hans, op. cit., p. 391.

26. Levine, Samuel A., Heart Disease: Its Medical Aspects in Annals of Internal Medicine, Vol. 33, No. 3, issue of September 1950, p. 572-581.

The administration of gluco-corticoids to man, as either Cortisone or as the stimulating agent ACTH, has produced dramatic effects in relieving the symptoms of rheumatic fever.[27]

7. Thyrotoxicosis.

The gluco-corticoids tend to decrease the basal metabolic rate.[28] Latent adreno-cortical insufficiency may therefore predispose to complications in thyroid disease.

In patients receiving ACTH and Cortisone Hardy has found that in all cases there is a decrease of serum Protein Bound Iodine. A beneficial result might be anticipated from the use of these hormones in certain cases of hyperthyroidism.[29]

8. Peptic Ulcer.

The local vascular changes frequently seen in the gastric and duodenal mucosa of patients resemble those artificially produced by mineralo-corticoids;[30] often their excretion of gluco-corticoids is subnormal.

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27. Hench, Philip S., et al., Effect of Cortisone and Pituitary Adrenocorticotropic Hormone (ACTH) in Rheumatic Diseases in Journal of American Medical Association, Vol. 144, No. 16, issue of December 16, 1950, p.1327-35.

28. Selye, Hans, Stress, p. 355.

29. Hardy, James D., The Effect of ACTH and Cortisone on Thyroid Function in American Journal of Medical Sciences, Vol. 220, No. 3, issue of September 1950, p.290-1.

30. Selye, Hans, op. cit., p. 704.

In dogs the survival time of animals with peptic ulcer is found to be longer on the administration of Cortisone than with ACTH, and considerably longer than in untreated animals. In the patients treated with either ACTH or Cortisone, some have become symptom free and some have become more distressed.[31] Other previous attempts to prevent the effects of disturbed chemistry from being experienced have been reasonably successful; they included Vagotomy,[32] (now made more effective by crushing the phrenic nerve);[33] irradiation to the coeliac plexus;[34] and administration of autonomic drugs (tetraethylammonium chloride,[35] and dibutoline[36]).

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31. Sandweiss, David J., Hormone Studies in Peptic Ulcer in Journal of American Medical Association, Vol. 144, No. 17, issue of December 23, 1950, p. 1436-42.

32. Camp, Edward H., and Lester R. Dragstedt, Gastric Vagotomy in Peptic Ulcer in Post Graduate Medicine, Vol. 3, No. 1, issue of January 1948, p. 8-12.

33. Bailey, U.G., Phrenic Nerve Crush as Adjunct to Vagotomy in Treatment of Peptic Ulcer in Journal of International College of Surgeons, Vol. 14, issue of November 1950, p. 600-603.

34. Hedfeld, A., Roentgen Therapy in Gastric Ulcer in Strahlentherapie, Vol. 77, No. 3, 1948, p. 387-388. Abstract in Journal of American Medical Association, Vol.140, No. 9, issue of July 2, 1949, p. 846.

35. Binter, Paul A., and Thomas J. Rankin, The Relief of Peptic Ulcer Pain By Tetraethylammonium Chloride in Annals of Internal Medicine, Vol. 33, No. 3, issue of September 1950, p. 649-658.

36. Lorber, Stanley H., and Thomas E. Machella, The Effect of Dibutoline Sulfate on Interdigestive Gastric Secretion of Peptic Ulcer Patients in American Journal of Medical Sciences, Vol. 219, No. 2, issue of February 1950, p. 193-198.

9. Nervous diseases.

Although activation of endogenous adreno-cortical secretion is difficult to accomplish in psychotic patients, electro-shock therapy has been shown to bring the excretion of 17-ketosteroids to a more normal level.[37] Some depressed patients have showed signs of adrenal activity while they received ACTH;[38] one manic patient showed marked improvement clinically while receiving Cortisone.[39]

It has been deduced that in psychotics the responsivity to corticoids is as among normal subjects; the defect is that adreno-cortical secretion is itself subnormal.[40]

Summary.

In each of these chronic diseases, including so-called mental disease, the secretion of the adrenal cortex appears causally related; substitution therapy confirms this in the clinical response that occurs. Consideration will now be given to the stress which occasions the corticoid secretion.

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37. Hoagland, Hudson, Changes in the Electroencephalogram and in the Excretion of 17-ketosteroids Accompanying Electro-shock Therapy of Agitated Depression in Psychosomatic Medicine, Vol. 8, No. 4, issue of July 1946, p. 246-251.

38. Cleghorn, R.A., et al., A Study of the Pituitary ACTH in Depressed Patients in Canadian Medical Association Journal, Vol. 63, No. 4, issue of October 1950, p. 329-31.

39. Lehmann, H.E., M. Turski and R.A. Cleghorn, The Eosinophil Response to ACTH in the Manic Phase of Manic Depressive Psychosis in Canadian Medical Association Journal, Vol. 63, No. 4, issue of October 1950, p. 325-329.

40. Selye, Hans, Stress, p. 674.

CHAPTER X

THE NATURE AND MANAGEMENT OF STRESS

Each of the clinical groups suffering chronic disease revealed on the Szondi profile a deep, unconscious longing for tenderness and love. This was of significant strength, as compared with a control group. Throughout the profiles, other supporting evidence for signs of passivity and emotional immaturity were found and indicated. As Deri interprets this, it means that either the need for motherly care was constitutionally very great, or that the need was normal but not satisfied.

One remembers that in the first year of life, the mother outweighs in physical and mental influence the effect of any other environmental impact. Children placed in institutions for the first two or three years, without parents or relatives to take an interest in them, frequently do not develop a play pattern, can not enter into group play, and abuse children near them.[1] Temper tantrums occur when any cooperation is expected from them implying interpersonal relationship.

A serious deformity in personality also may occur

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1. Bender, Lauretta, Anxiety in Disturbed Children in Anxiety, edited by Paul H. Hoch and Joseph Zubin, New York, Grune & Stratton, 1950, p. 120.

in a child when there is a critical change in family pattern relationship before the latter part of the first half-year of life. This is the period when children first identify their parents and show a definite and individual relationship to people around the;[2] schizophrenic children, victims of hereditary factors and a physiological crisis of some sort, characteristically can not relate to, or accept, the mothering relationship, however good it may be.[3]

Every child experiences some frustration, which indeed is a basis for conditioning to living in society. If, however, his personality is interfered with unduly, he reacts by feeling that his life as a person is in danger, as it really is; this feeling is basic anxiety.[4] The drive to preserve the self motivates the child to activity. He accepts the adverse conditions and adapts to them, as a tree accepts rocky soil and gales, clings to what it finds, and grows distorted and misshapen but survives. He may seek approval and affection from those about him, even from a hostile parent; he may take up the challenge and fight, or he may withdraw into isolation.

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2. Bender, Lauretta, Anxiety in Disturbed Children, p.121.

3. --------, op. cit., p. 300.

4. Ivimey, Muriel, Developments in the Concept of Transference in American Journal of Psychoanalysis, Vol. 4, No. 1, 1944, p. 128-133.

The culture of middle class Europeans and Americans probably exerts more severe pressure upon the young child - upon both his bodily processes and his emotional development - than does the culture of any other people in the world.[5] There is scarcely a mother who does not use either physical coercion or social punishments in attempting to train her child. The use of stigmas, that arouse shame, fear and guilt in the three year old, is usual household practice.

Where parents set themselves up in their children's eyes as beyond hostility, beyond being wrong, and beyond being argued with, crippling effects of such attitudes are found in their offspring - fear of independence, insecurity, restrained hostility, and the inability to love in any but a dependent and infantile fashion.[6]

Horney points out although such a child will not inevitably retain his defensive techniques

> . . . there is grave danger that he will. They can be eradicated by an early radical change of environment, or they can be modified, even after a considerable lapse of time, through any number of fortuitous happenings, such as finding an understanding teacher, a friend, lover, mate, an engrossing task suited to his personality and abilities.[7]

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5. Davis, W. Allison, and Robert J. Havighurst, Father of the Man, Boston, Houghton Mifflin, 1947, p. 10.

6. Silverberg, William V., Present Trends in Psychoanalytic Theory and Practice in American Journal of Psychoanalysis, Vol. 3, No. 1, 1943, p. 54-56.

7. Horney, Karen, Self-analysis, New York, W.W. Norton, [illegible], p. 46.

Cannon showed that emotions disturb the physiology in definite, measurable ways. It is suggested by another that menacing influences which can be surmounted give rise to disturbances of the sympathetic nervous system, and that those which appear insurmountable produce disturbances of the parasympathetic system.[8]

These, according to Strecker, may be considered to be on three levels.[9] The first does not enter the realm of disease - there is merely hyperactivity of function as the individual makes the best compromise he can in groping for a solution to his problem. At the second level, the conflict still is unsolved, and the patient compromises further by developing symptoms of which he becomes aware. He consults his doctor concerning headaches, nausea, or any of very many symptoms. (All his doctor finds is evidence of autonomic imbalance). Finally, after years of anxiety, the same unresolved conflicts are translated into changed body structure.

The fact that the problem is not solved is very significant. Allport maintains that adult motives are self-sustaining, contemporary systems, growing out of antecedent

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8. Flynn, John T., Somatic Phenomena in Psychoneurosis in American Journal of Medical Sciences, Vol. 193, No. 4, issue of April 1937, p. 548-553.

9. Strecker, Edward A., Dynamic Etiological Concepts in Post Graduate Medicine, Vol. 7, No. 3, issue of March 1950, p. 181-185.

systems, but functionally independent of them.[10] Theoretically adult purposes can be traced back to seed-forms in infancy, but as an individual matures the bond is broken.

Inasmuch as the patients suffering chronic disease continue to be swayed by the longings of childhood, and act even unconsciously in such a way as to prolong, or restore, their childish, dependent state, they have failed to mature; they have not broken the bonds.

Wilson puts the situation more bluntly.

> These patients live as infants in the passive stage of babyhood, and what they lamentably lack is any willingness to bite into their difficulties. . . . They will not, or cannot, show that hardness or determination which biting symbolizes.[11]

Like rats bred in the effete environment of the laboratories, they have adjusted to their surroundings in the best way they know how.[12] They are overly submissive and timid. Wild rats, of the "alley-ashcan" variety, display their uninhibited aggressiveness, and their independence, and, on examination are found to have been possessed of much better developed adrenal cortices.

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10. Allport, Gordon W., Personality, New York, Henry Holt, 1937, p. 194.

11. Wilson, Henry, Suicidal Compromises: Psychology and Rehabilitation in British Medical Journal, Vol. 1, issue of January 3, 1942, p. 9-12. Quotation p. 11.

12. Burlingame, C.Charles, Psychiatry in 1950 in Journal of American Medical Association, Vol. 144, No. 16, issue of December 16, 1950, p. 1365-68.

The fact that so many persons fail to attain maturity is explained by Grinker.

> With the threat of punishment and fear of loss of love, children are forced to repress their emotional hungers and their primitive angry reactions to painful stimuli or situations, or to frustrations. Therefore, all of us approach adult life with a reservoir of inhibited feelings considered as "wrong" or "sinful", and unacceptable to civilized society - a backlog of unsatisfied immature desires to which we secretly cling with the greatest of inertia. [13]

If, in addition, one is at the mercy of inherited defects and has endured exceptionally severe childhood trauma, maturity, without assistance, may be unattainable.

> In this respect personality can be likened to the process of photosynthesis which takes place in plants. Leaves take in substances from the air and soil, and organize them by means of chlorophyll and sunlight into substances which make the plant's structure and its growth. In the same way a little child somehow absorbs or incorporates, through processes not yet very clear to us, the feelings of the persons in his family for each other, and synthesizes them with his own feelings into patterns of reactions which come to represent his personality. [14]

It has been demonstrated that the immature personality is manifested by signs indistinguishable from those often associated with psychoneurotic states. The Szondi

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13. Grinker, Roy R., Psychiatric Objectives of Our Time in Canadian Medical Association Journal, Vol. 56, No. 2, issue of February 1947, p. 153-162.

14. Menninger, Karl, The Anatomy and Physiology of the Personality in Bulletin of the Menninger Clinic, Vol. 14, No. 2, issue of March 1950, p. 75-83.

profiles of patients with pronounced chronic somatic disease resemble those of patients suffering autonomic imbalance , and to a less degree those with anxiety and depression.

In War, men with and without previous body complaints break down. The social effects of this occurrence are tremendous. As a group, subsequently, they are described as earning less, less contented, less healthy and less tolerable to live with.[15] Severe stress in sensitized individuals produced incapacity for military duty, and for full civilian responsibilities.

In time of peace, countless thousands are unable to work with maximum efficiency, because they suffer impaired physical and mental health. Probably they inherit physical defects which, being acted on by physical or emotional stress of the environment, tend to make them unusually susceptible to the development of their illness. Whether or not the defect is manifested in the process of cell respiration is still only speculative. The fact that stress strongly influences body-chemistry, and eventually body structure, is now apparent.

The patients who were given the Szondi test in this survey revealed, for the most part, two personality feat-

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15. Lewis, Aubrey, Social Effects of Neurosis in Lancet, Vol. 244, No. 1, issue of February 6, 1943, p.167-70.

ures, a yearning that affection and love be shown them, and an inability to face or to express their emotions. The desire to be mothered appeared independent of sex, age, race and environment. The 14 groups seemed to be represented by 5 personality patterns - they varied in the amount of hostility and depression that was evident in the profile, but they were alike in expressing dependency.

It appeared from the profiles that patients suffering to a greater degree from autonomic imbalance than from tissue changes were more inhibited in their reactions, and content to be more passive. More signs of active anxiety and disturbing depression were associated with the cases where body structure had already been altered. The very inactivity and dependent inertness of the first group seem related to the therapeutic difficulties in stimulating them toward recovery.

Patients with actual somatic deformation are driven by their greater anxiety and depression to activity. Hence they are perhaps economically more valuable, until progressing physical disability forces them to cease work, and, because of their urge for successful accomplishments, are more amenable to psychotherapy.

They appear, from the Szondi profiles, to represent a state more nearly identical with an anxiety reaction or a depression. In this respect they constitute a more

seriously affected group, as far as their mental and physical health are concerned, than persons suffering autonomic dysfunction unassociated with structural changes.

In the 14 groups and in the psychoses, it is demonstrated by experimental and therapeutic methods that the secretion of adreno-corticoids is not normal. It is proved in the laboratory that stress effects changes in the secretion. It is observed that emotional conflict acts as stress.

In the 14 groups and in the psychoses, it has been established that the family relationships of the patients have been in a large per cent of cases not mentally healthy.

On the basis of the Szondi profiles available, it would appear that patients suffering from chronic disease, in addition to a hereditary predisposition and to other varieties of stress, suffer coincidental mental conflict arising from their condition of emotional immaturity. To relieve their mental distress as well as their physical complaints, the administration of adrenal hormones and all other therapeutic devices can be wholly effective only in conjunction with skilful psychotherapy.

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--------, et al., The Problem of Rheumatism and Arthritis in Annals of Internal Medicine, Vol. 12, No. 8, issue of January 1939, p. 1295-1374.

-------- and Edward W. Boland, The Management of Chronic Arthritis and Other Rheumatic Diseases Among Soldiers of the United States Army in Annals of Internal Medicine, Vol. 24, No. 5, issue of May 1946, p. 808-825.

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APPENDIX 1

page

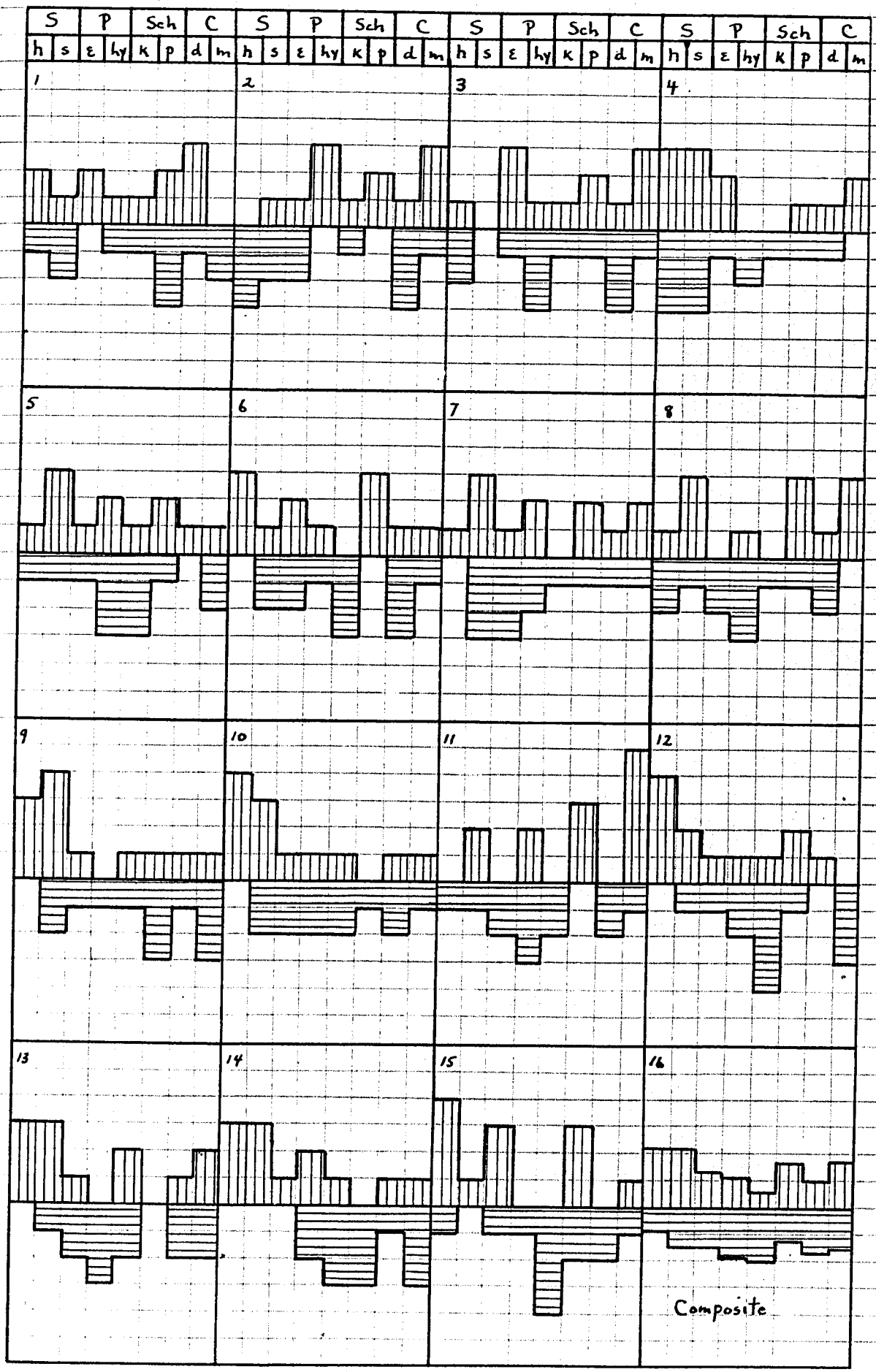
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Control Groups 393

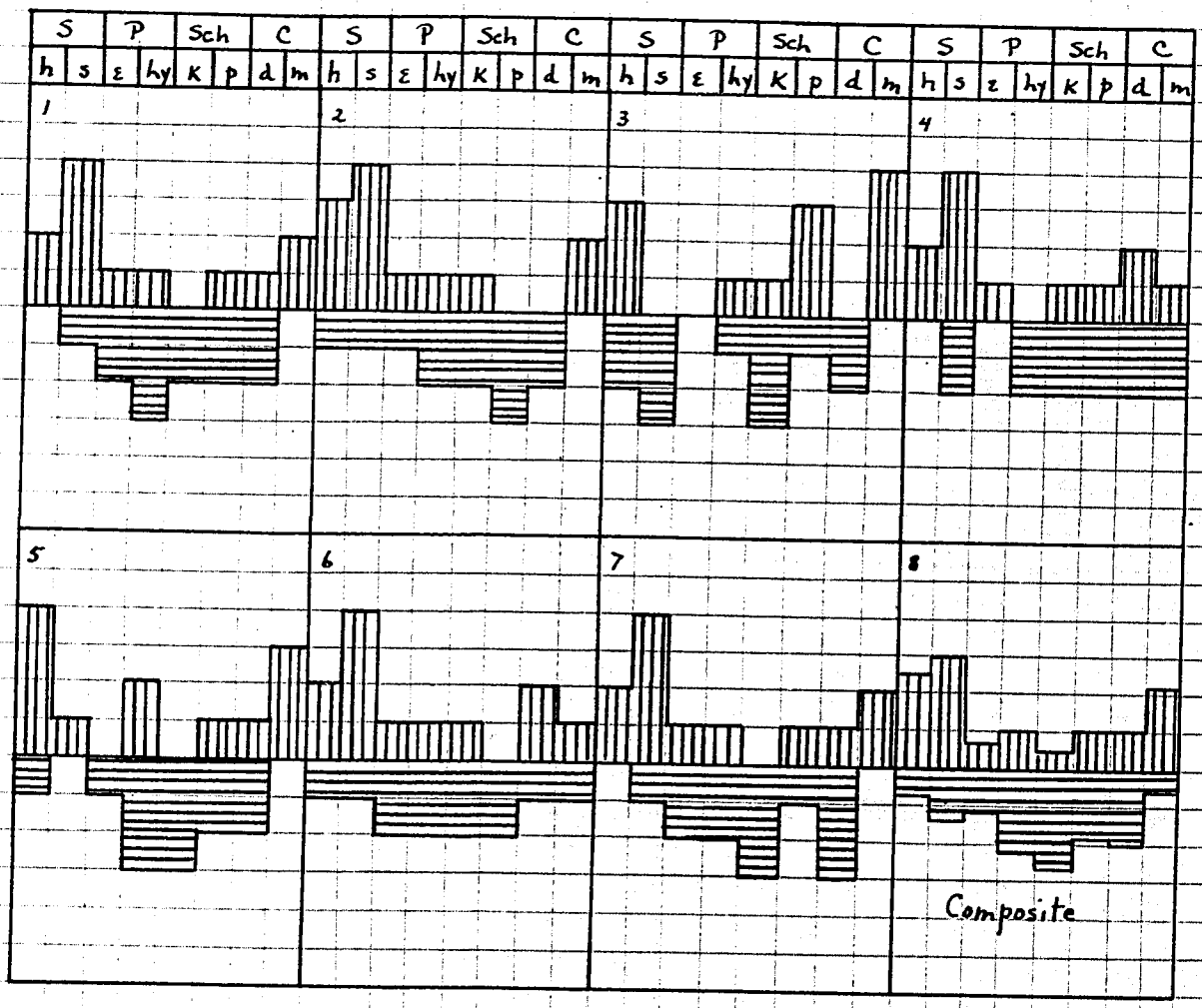
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Correlations 398

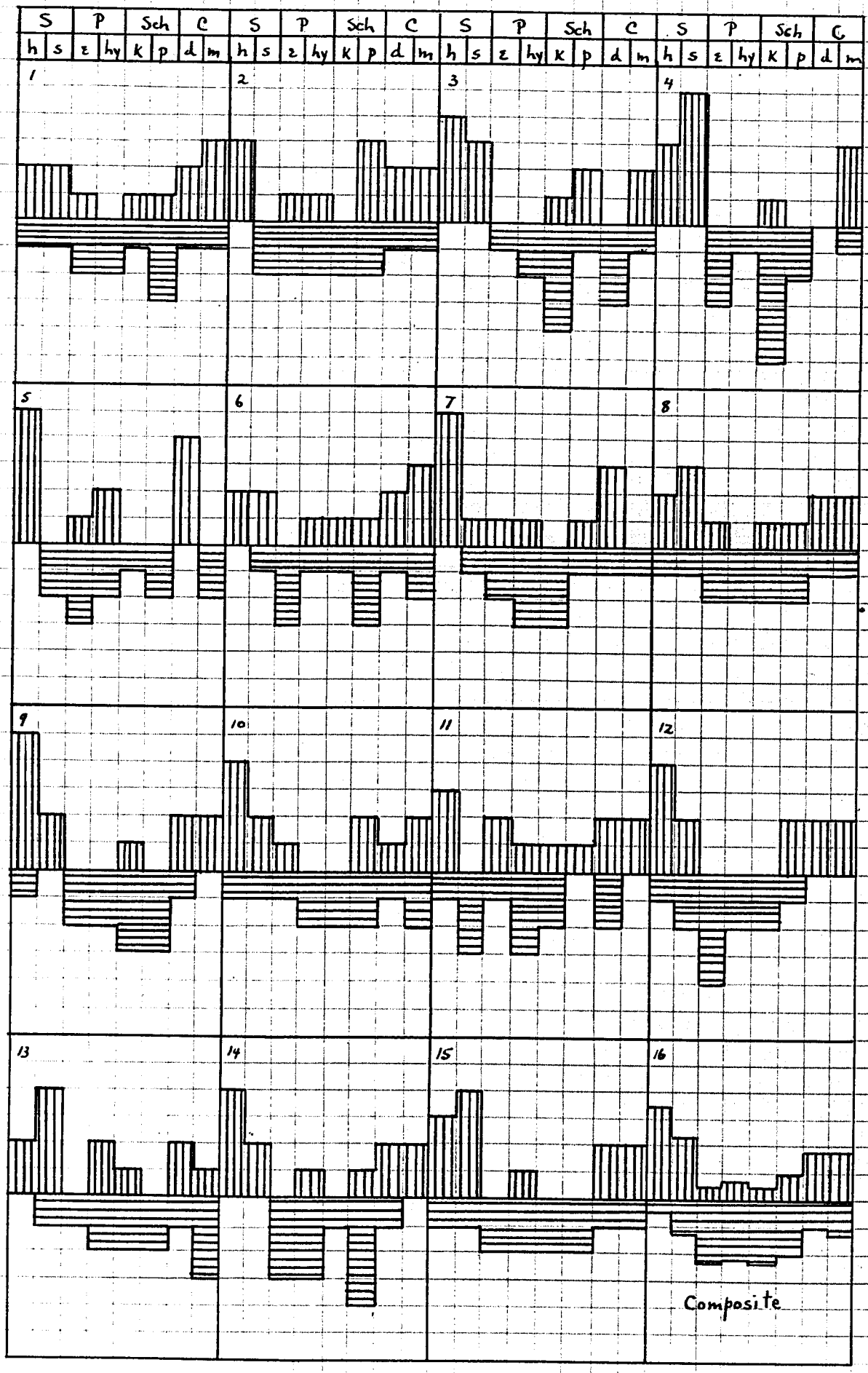
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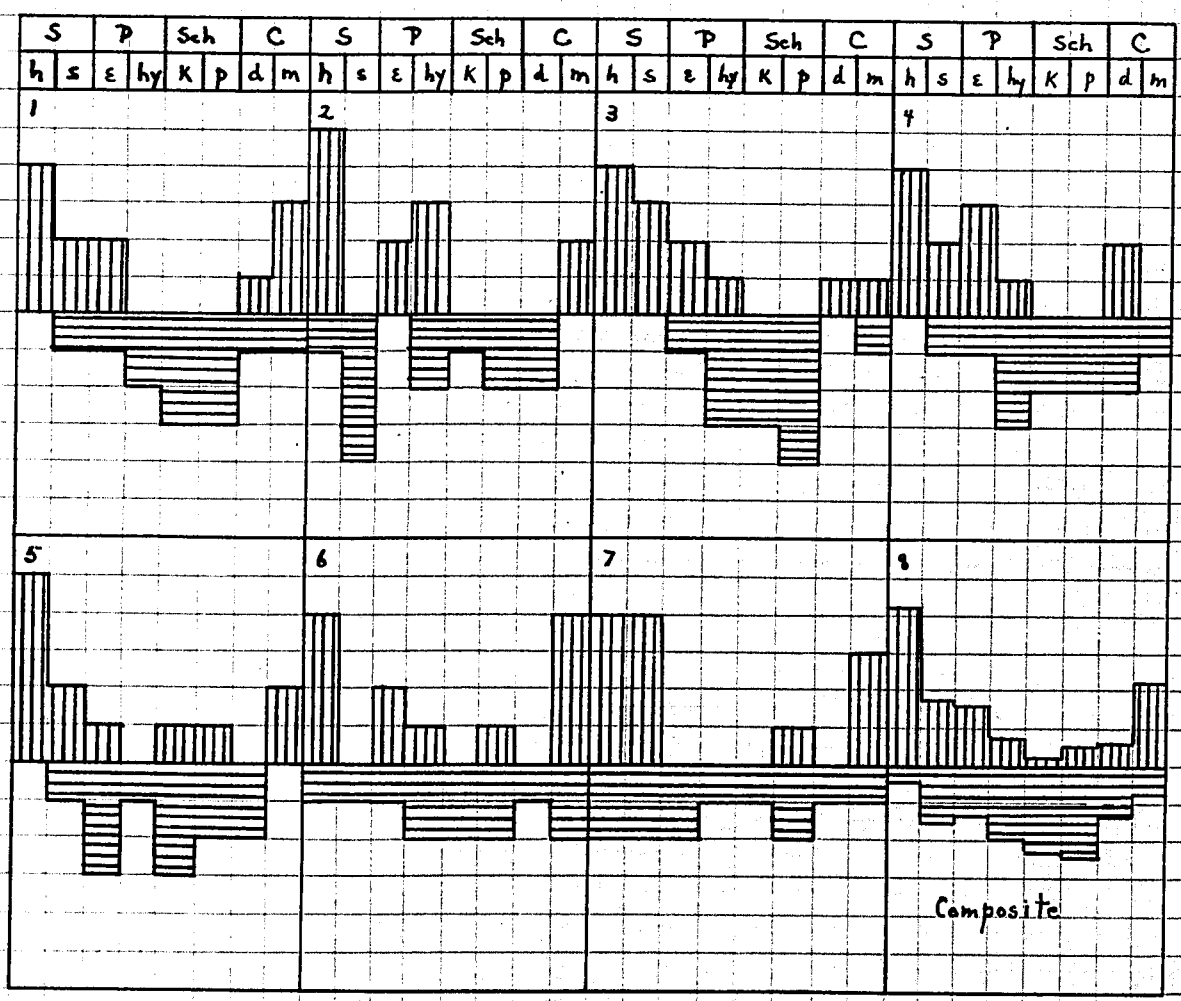
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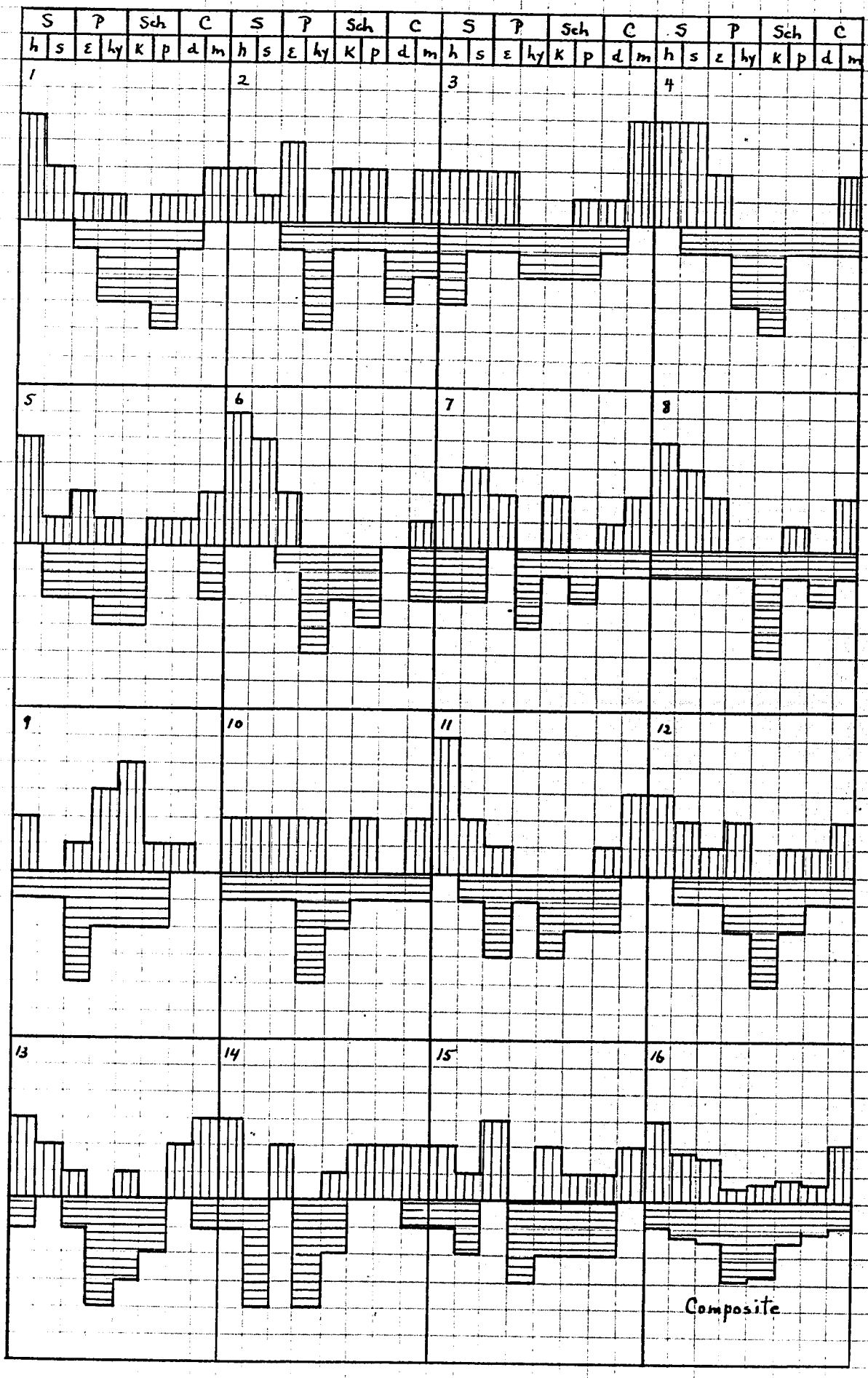
Arthritis


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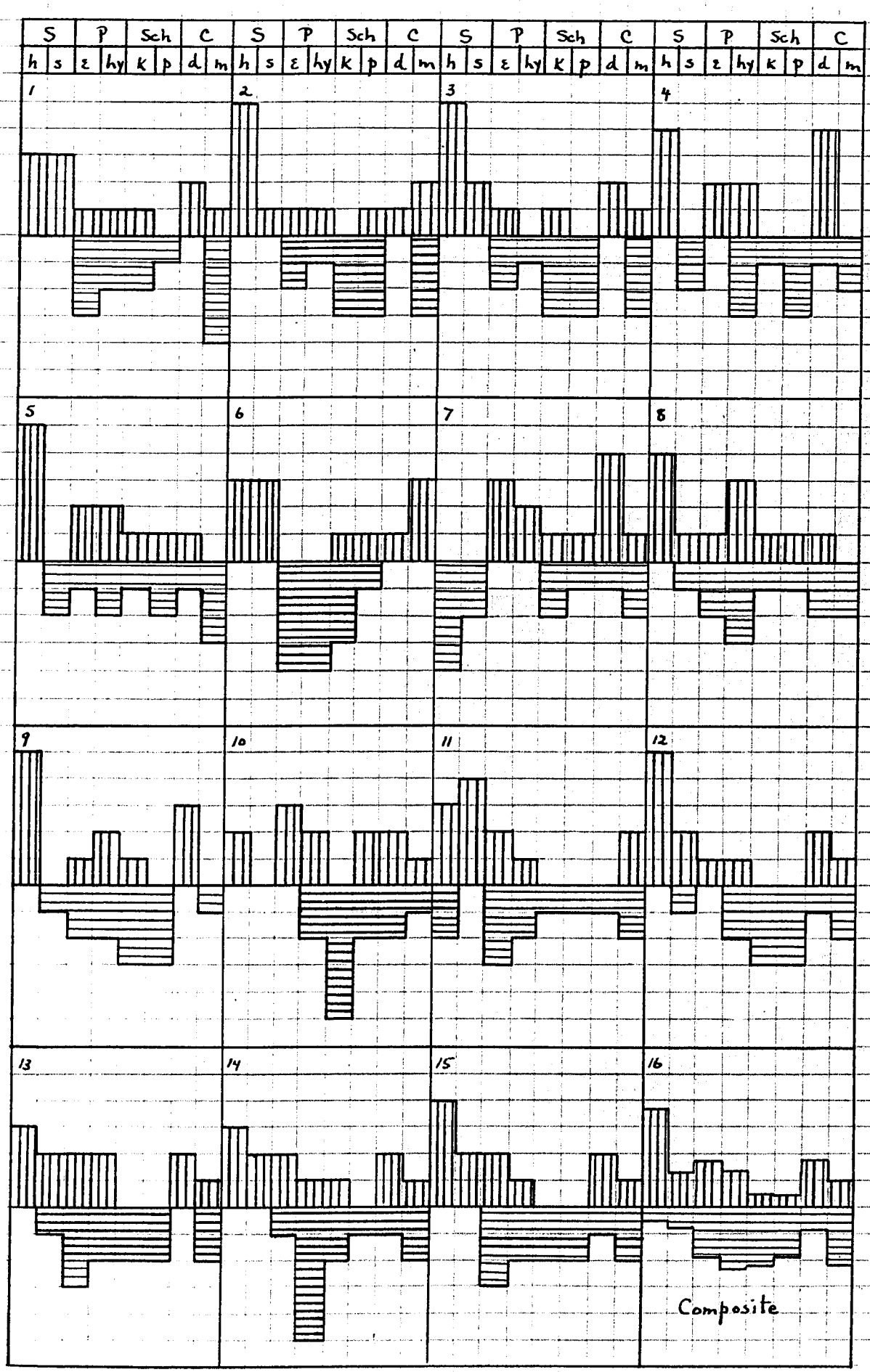
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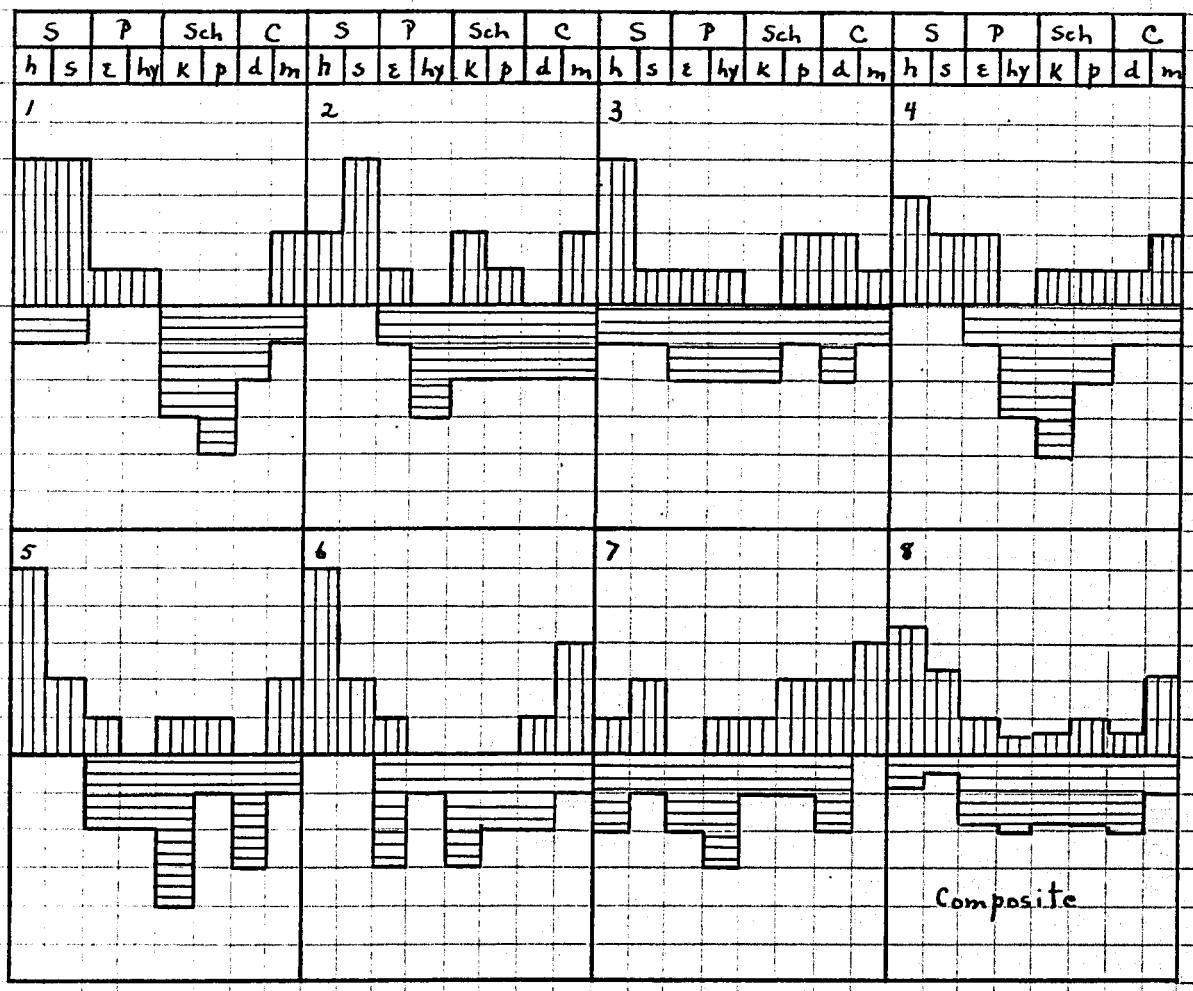
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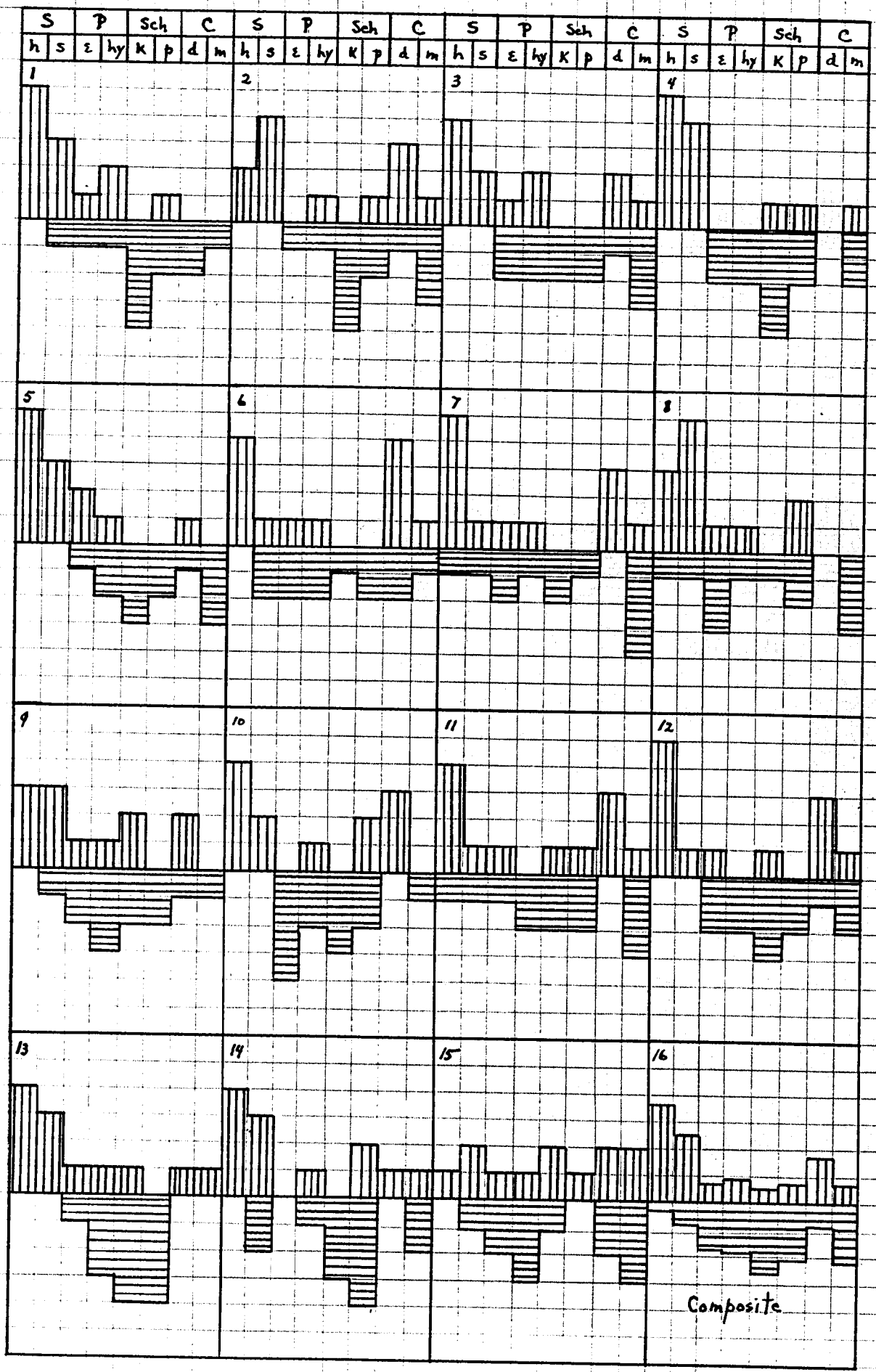
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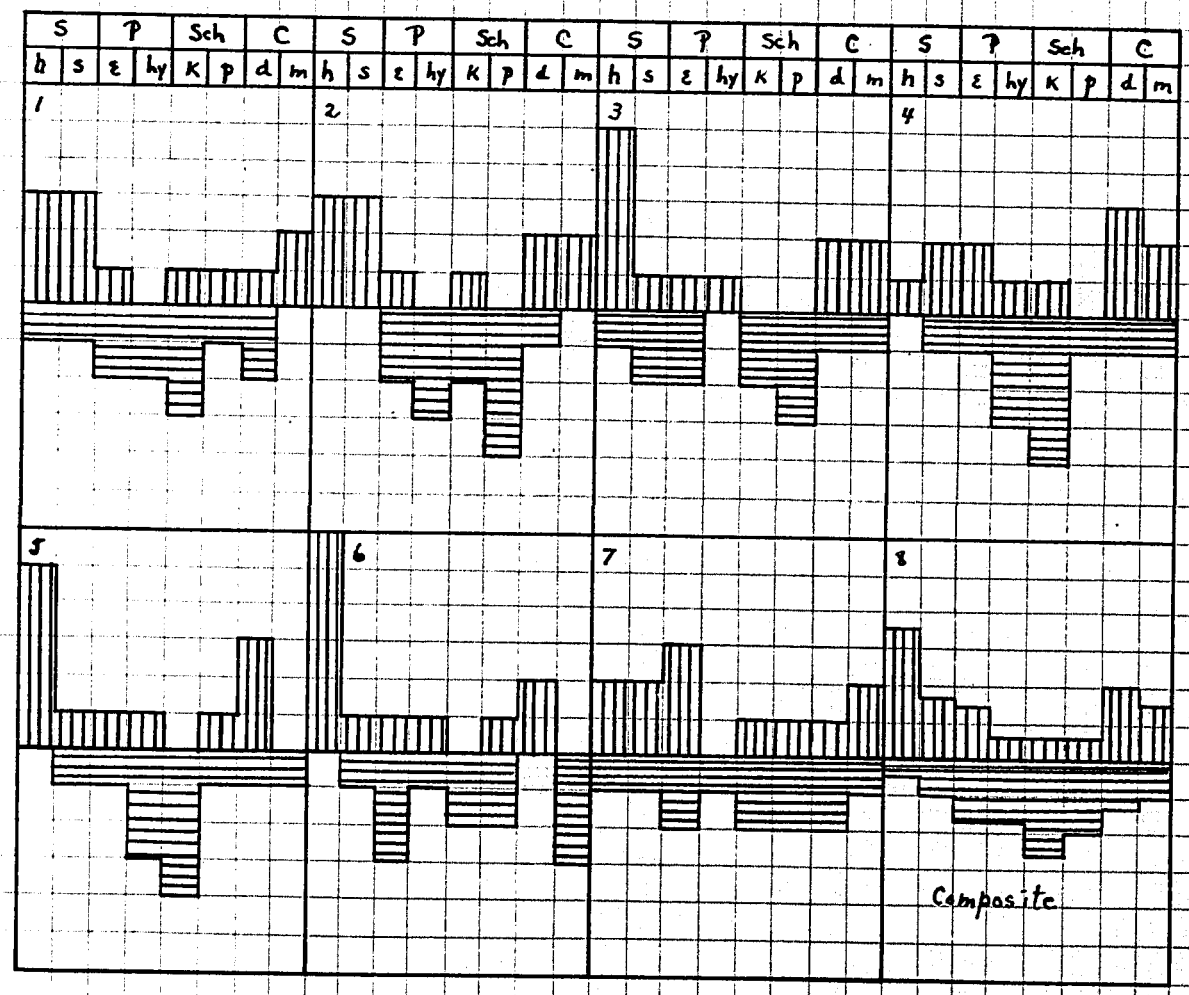
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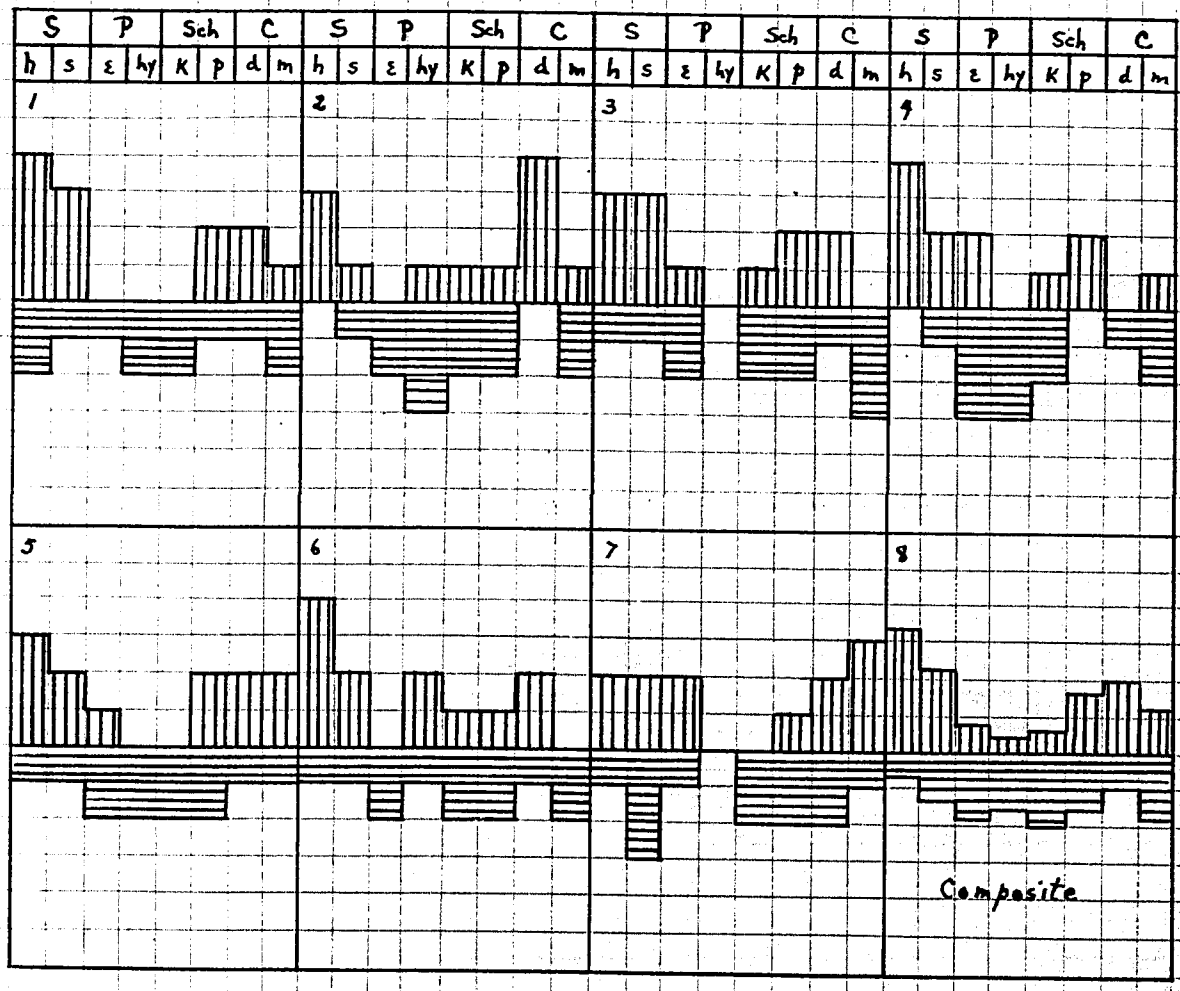
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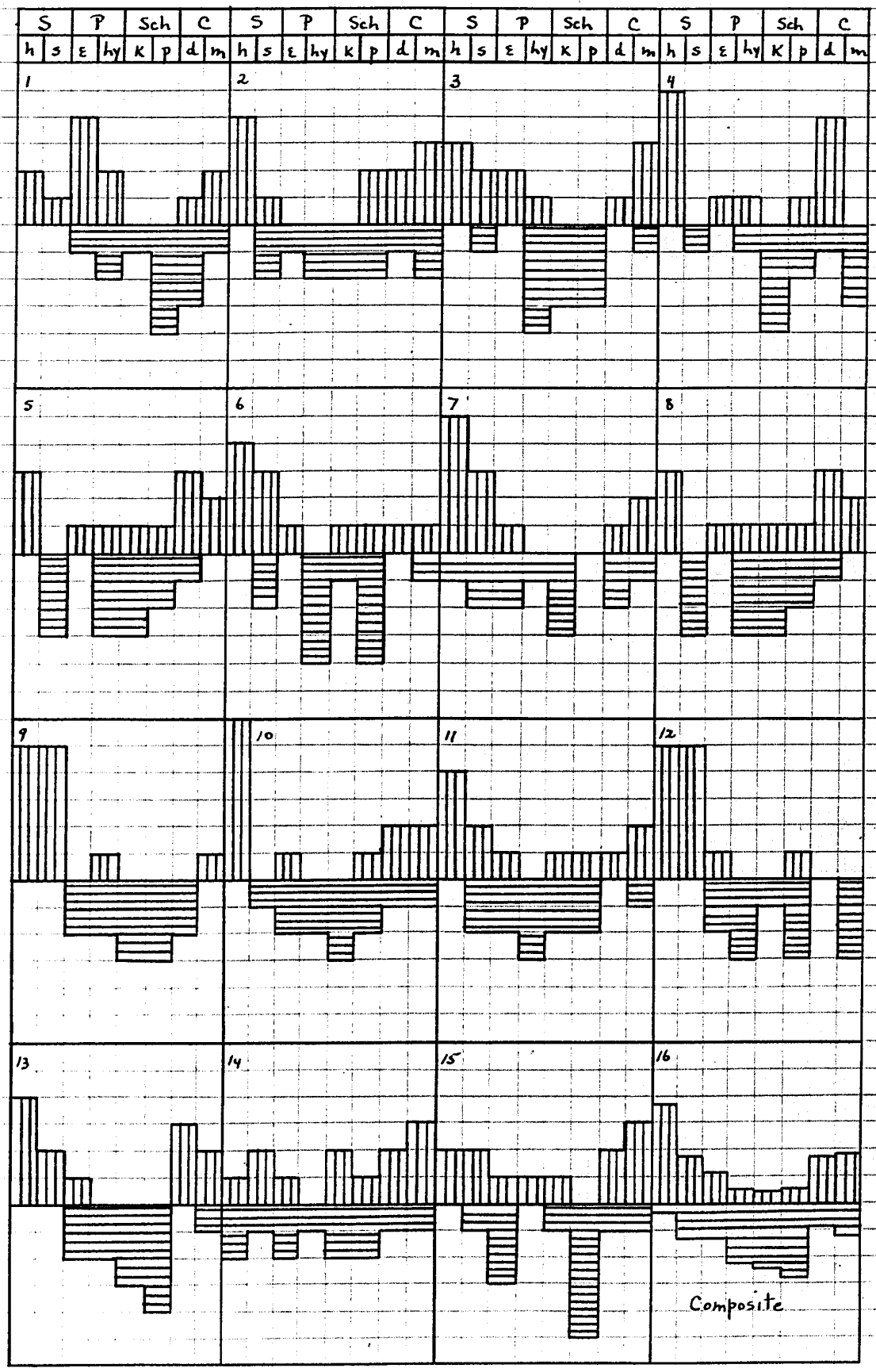
Muscle Tension



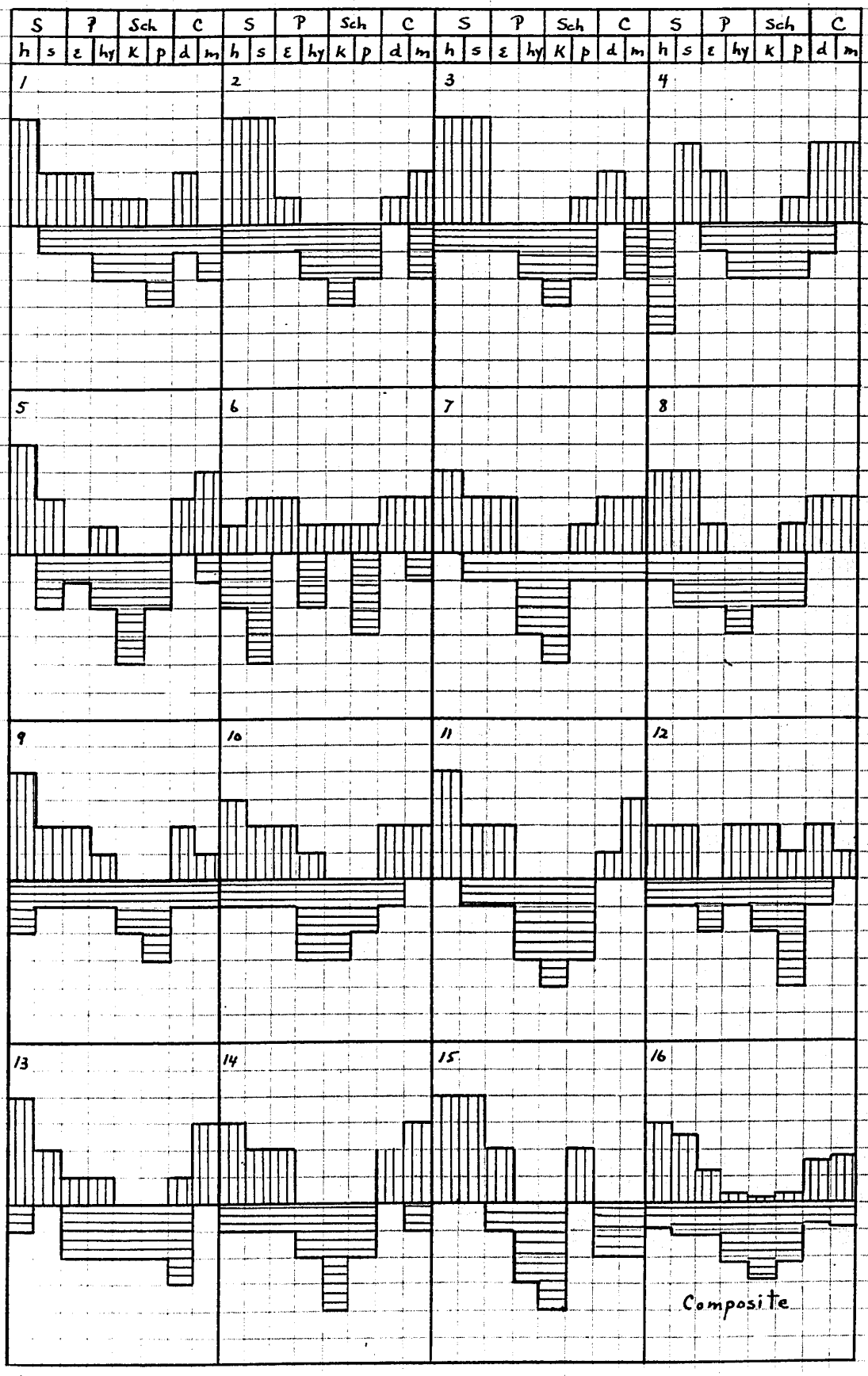
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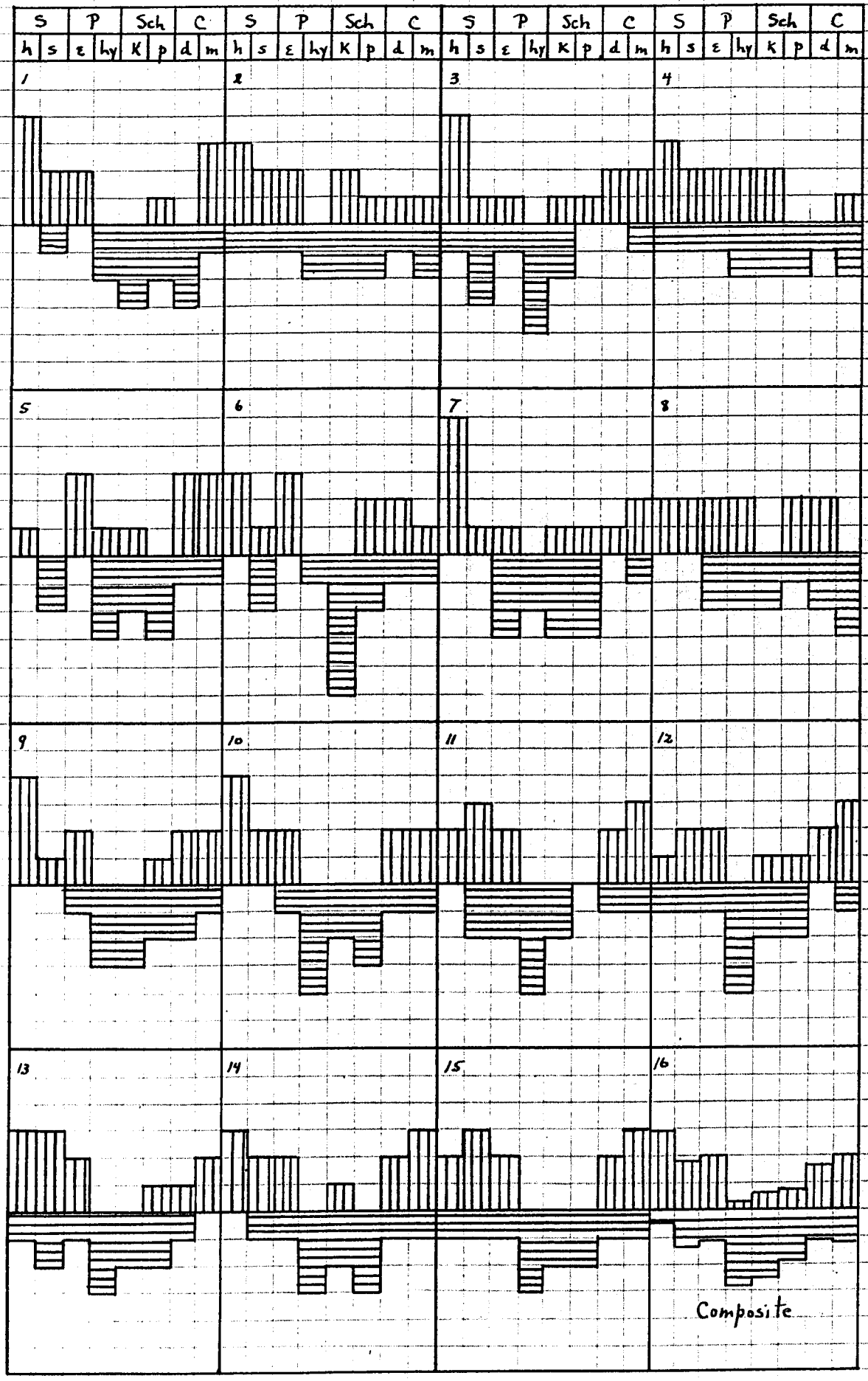
Pernicious Anaemia



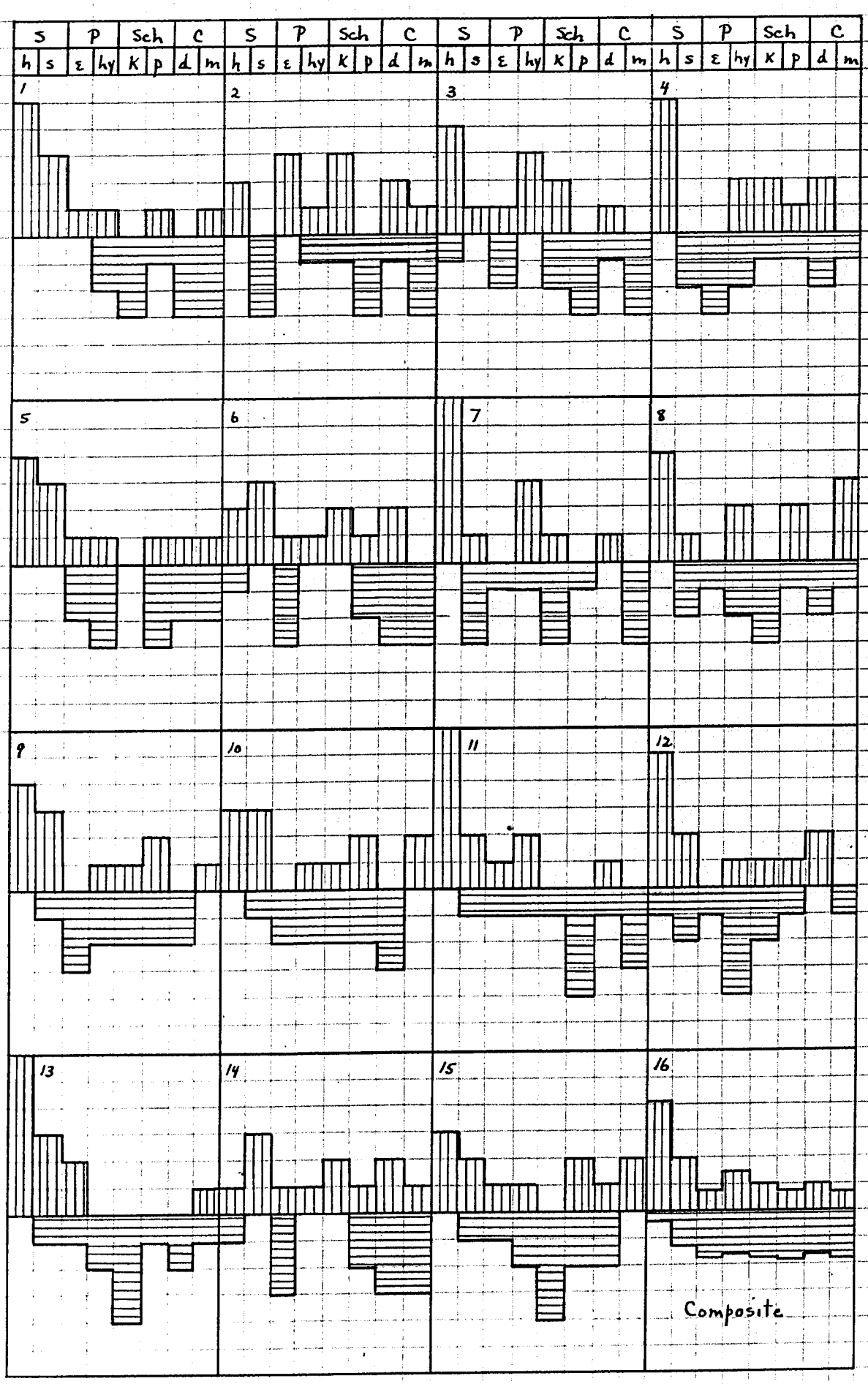
Rheumatic Heart Disease



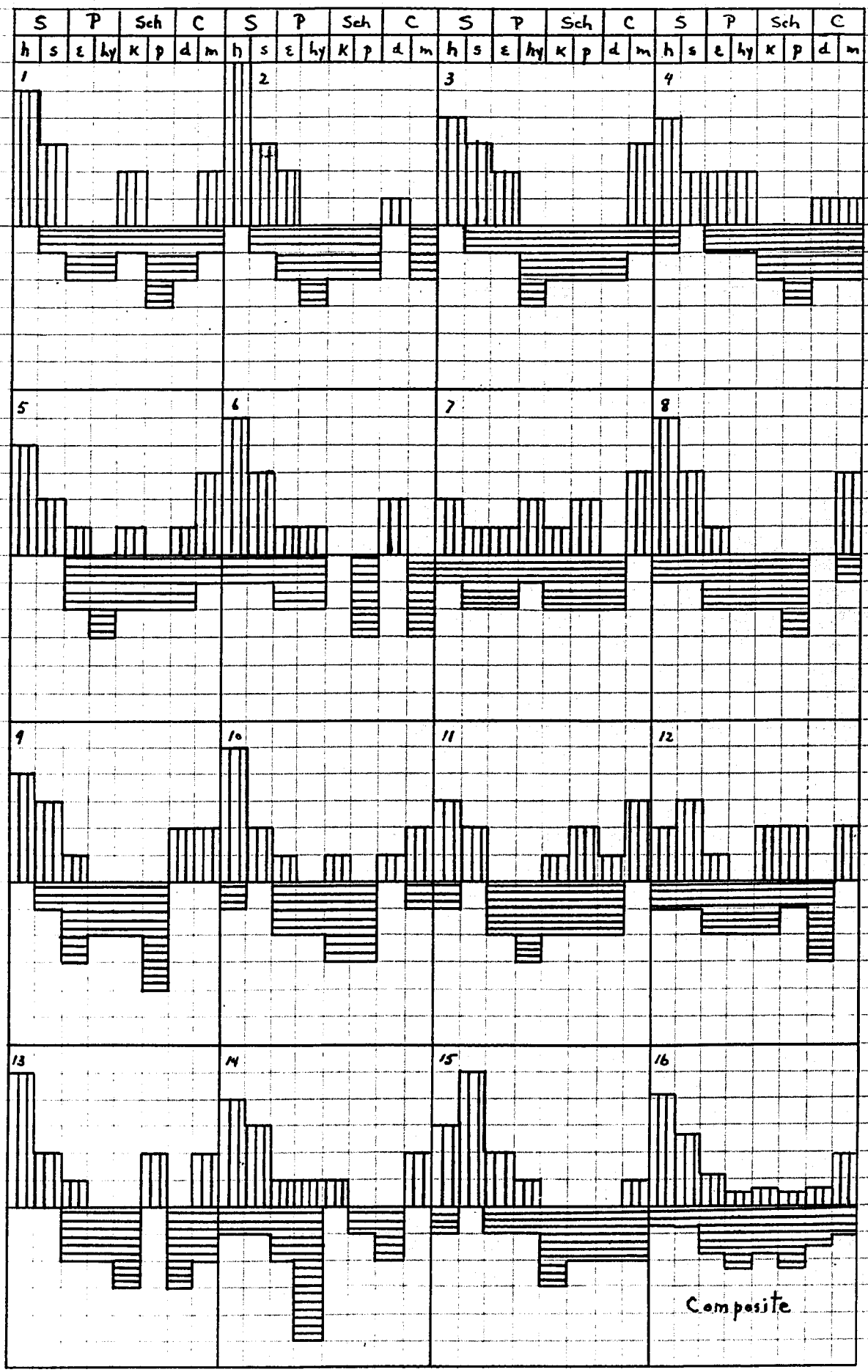
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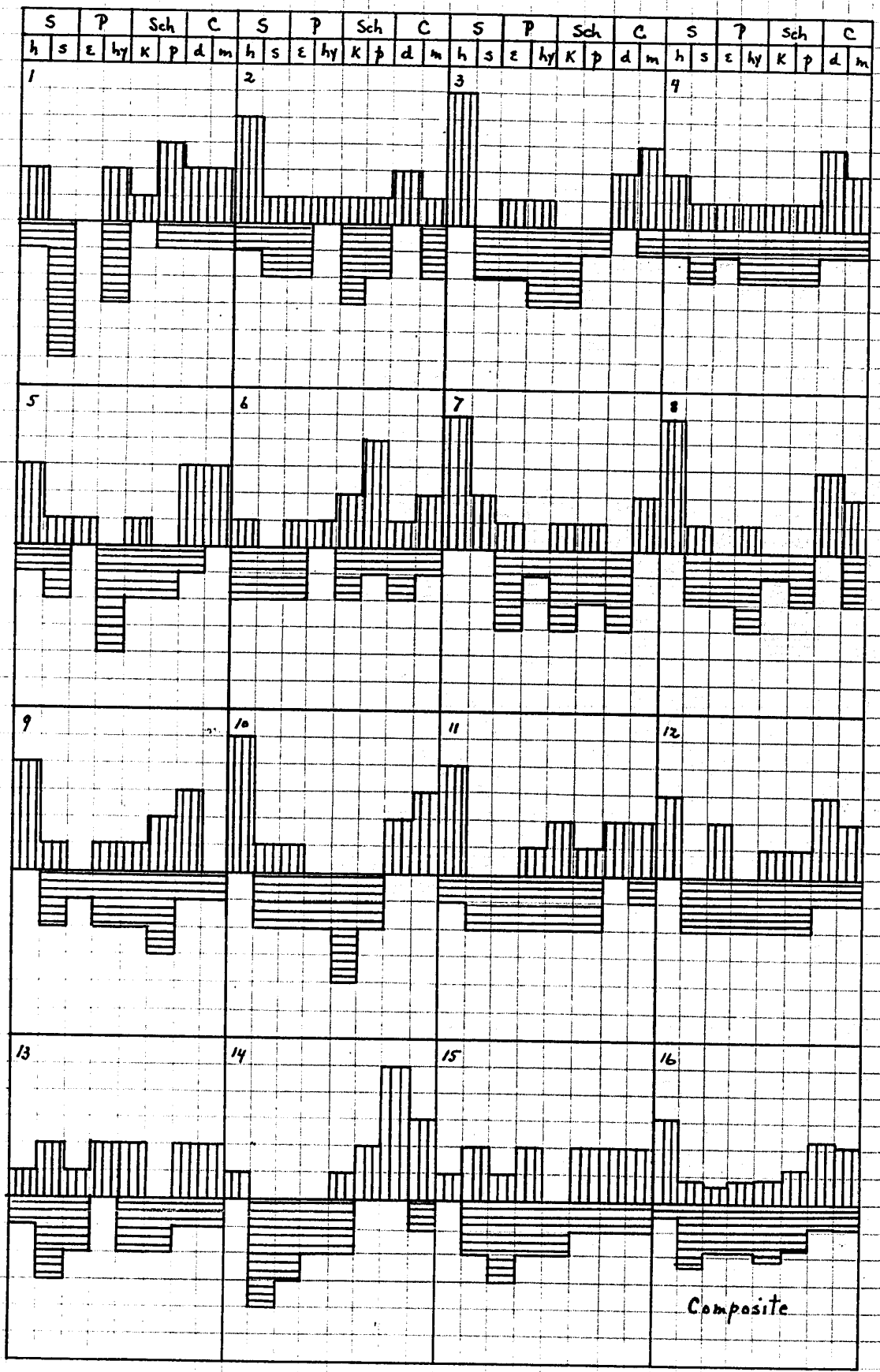
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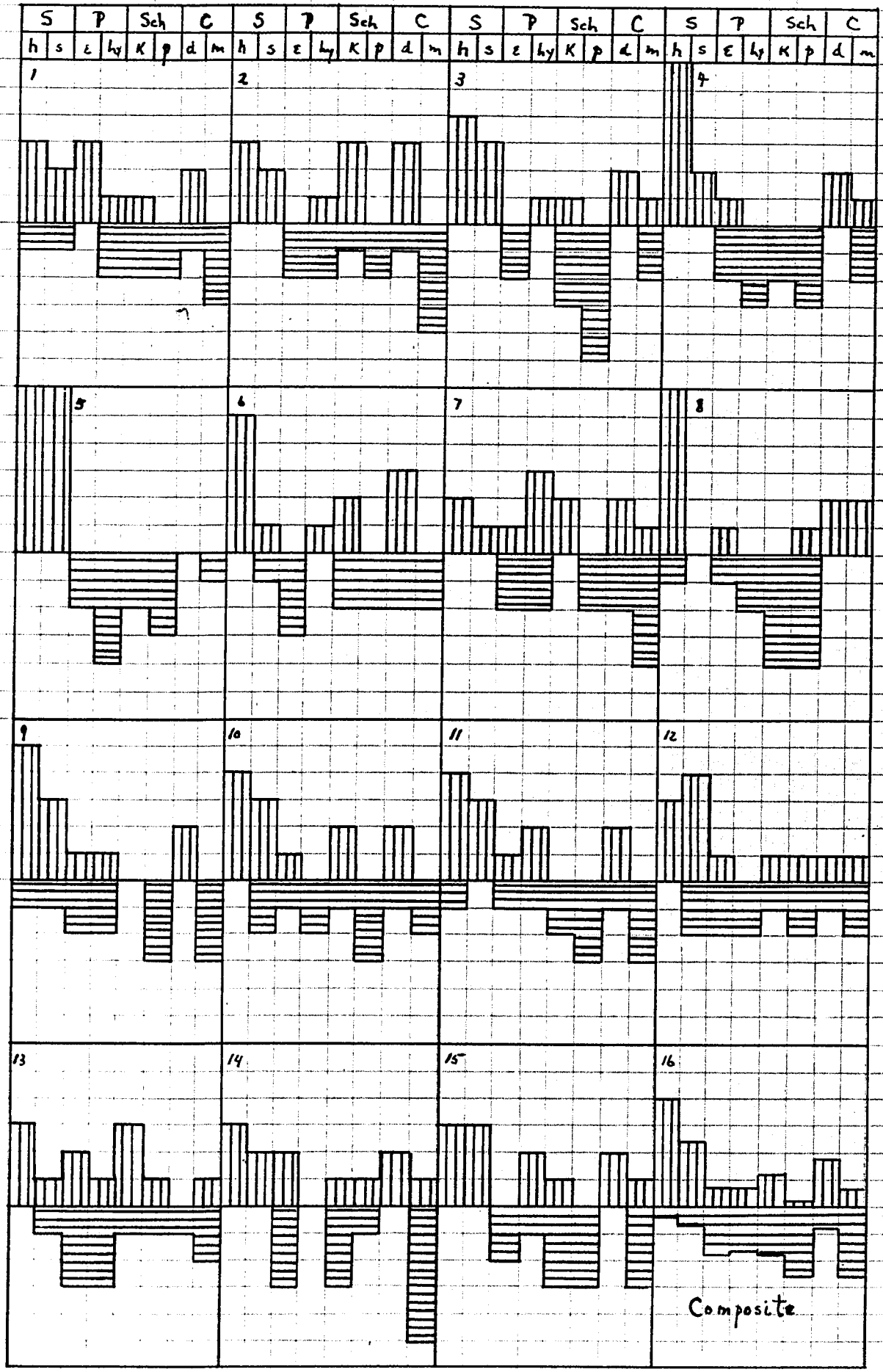
Peptic Ulcer



Anxiety


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Depression



1. Test - Retest (Civic Hospital, DVA Pavilion)

	Likes			Dislikes			Total Choices		
h.	245	0.83	-	253	1.37	-	235	0.17	-
s.	245	0.83	-	223	0.63	-	228	0.30	-
e.	249	1.10	-	252	1.30	-	252	1.30	-
hy.	213	1.30	-	221	0.77	-	210	1.50	-
k.	222	0.70	-	235	0.17	-	223	0.63	-
p.	206	1.77	-	236	0.23	-	212	1.37	-
d.	265	2.17	-	237	0.30	-	252	1.30	-
m.	237	0.30	-	232	0.03	-	247	0.97	-

2.Male - Female

h.	260	1.83	-	210	1.50	-	257	1.63	-
s.	273	2.70	-	234	0.10	-	251	1.23	-
e.	233	0.03	-	249	1.10	-	251	1.23	-
hy.	238	0.37	-	221	0.77	-	239	0.43	-
k.	238	0.37	-	258	1.70	-	244	0.77	-
p.	245	0.83	-	205	1.83	-	220	0.83	-
d.	193	2.63	-	231	0.10	-	225	0.50	-
m.	199	2.23	-	243	0.70	-	216	1.10	-

3.Old - Young

h.	240	0.50	-	228	0.30	-	248	1.03	-
s.	223	0.63	-	246	0.90	-	238	0.37	-
e.	220	0.83	-	229	0.23	-	216	1.10	-
hy.	242	0.63	-	208	1.63	-	216	1.10	-
k.	227	0.37	-	233	0.03	-	236	0.23	-
p.	210	1.50	-	213	1.30	-	208	1.63	-
d.	232	0.03	-	223	0.63	-	224	0.57	-
m.	237	0.30	-	235	0.17	-	254	1.43	-

Hospital differences

4.Civic Hospital - Ambulatory

h.	229	0.23	-	217	1.03	-	229	0.23	-
s.	290	3.83	5%	226	0.43	-	276	2.10	-
e.	232	0.03	-	249	1.10	-	248	1.03	-
hy.	197	2.37	-	288	3.70	5%	248	1.03	-
k.	196	1.43	-	222	0.70	-	210	1.50	-
p.	205	1.83	-	216	1.10	-	215	1.17	-
d.	246	0.90	-	176	3.77	5%	192	2.70	-
m.	248	1.03	-	233	0.03	-	249	1.17	-

5. Civic Hospital - DVA Pavilion

	Likes			Dislikes			Total Choices		
h.	217	1.03	-	221	0.77	-	200	2.17	-
s.	225	0.50	-	228	0.30	-	237	0.30	-
e.	196	1.83	-	219	0.90	-	184	3.23	5%
hy.	237	0.30	-	221	0.77	-	227	0.37	-
k.	245	0.83	-	223	0.63	-	236	0.23	-
p.	233	0.03	-	259	1.77	-	263	2.03	-
d.	225	0.50	-	236	0.23	-	231	0.10	-
m.	248	1.03	-	231	0.10	-	254	1.43	-

6. Civic Hospital - General Hospital

h.	246	0.90	-	237	0.30	-	234	0.10	-
s.	201	2.16	-	228	0.30	-	211	1.43	-
e.	233	0.03	-	240	0.50	-	272	2.63	-
hy.	249	1.10	-	178	3.63	5%	216	1.10	-
k.	287	3.63	5%	250	1.17	-	295	4.17	1%
p.	270	2.50	-	233	0.03	-	236	0.23	-
d.	225	0.50	-	277	2.97	-	265	2.17	-
m.	220	0.83	-	166	4.43	1%	219	0.90	-

7. DVA Pavilion - Ambulatory

h.	228	0.30	-	241	0.57	-	241	0.57	-
s.	167	4.37	1%	239	0.43	-	199	2.23	-
e.	244	0.77	-	195	2.50	-	244	0.77	-
hy.	209	1.57	-	187	3.03	-	228	0.30	-
k.	213	1.30	-	226	0.43	-	237	0.30	-
p.	235	0.17	-	183	3.30	-	218	0.97	-
d.	187	3.03	-	257	1.63	-	228	0.30	-
m.	238	0.37	-	197	2.37	-	178	3.63	5%

8. General Hospital - Ambulatory

h.	250	1.17	-	190	2.83	-	226	0.43	-
s.	242	0.63	-	205	1.83	-	238	0.37	-
e.	240	0.50	-	269	2.43	-	266	2.23	-
hy.	246	0.90	-	225	0.50	-	266	2.23	-
k.	267	2.30	-	249	1.10	-	263	2.03	-
p.	209	1.57	-	254	1.43	-	225	0.50	-
d.	219	0.90	-	234	0.10	-	241	0.57	-
m.	221	0.77	-	229	0.23	-	198	2.30	-

9. General Hospital - DVA Pavilion

	Likes			Dislikes			Total Choices		
h.	283	3.37	5%	201	2.10	-	259	1.77	-
s.	184	3.23	5%	233	0.03	-	206	1.77	-
e.	259	1.77	-	257	1.63	-	271	2.57	-
hy.	240	0.50	-	221	0.77	-	231	0.10	-
k.	260	1.83	-	253	1.37	-	272	2.63	-
p.	237	0.30	-	223	0.63	-	208	1.63	-
d.	228	0.30	-	254	1.43	-	245	0.83	-
m.	210	1.50	-	233	0.03	-	199	2.30	-

10. French - French controls

h.	31	3.07	1%	66	1.93	-	36	2.36	1%
s.	88	0.93	-	63	1.50	-	62	1.36	-
e.	71	2.64	1%	37	2.22	5%	39	1.93	-
hy.	55	0.36	-	61	1.21	-	59	0.93	-
k.	64	1.64	-	40	1.79	-	46	0.93	-
p.	70	2.50	1%	35	2.50	1%	49	0.50	-
d.	39	1.93	-	64	1.64	-	53	0.07	-
m.	58	0.78	-	61	1.21	-	67	2.07	-

11. French - mixed controls

h.	164	4.57	1%	242	0.03	-	173	3.67	5%
s.	247	0.97	-	257	1.63	-	263	2.03	-
e.	242	0.03	-	212	1.37	-	211	1.43	-
hy.	247	0.97	-	250	1.17	-	223	0.63	-
k.	253	1.37	-	204	1.90	-	225	0.50	-
p.	308	5.03	1%	164	4.57	1%	321	0.77	-
d.	172	4.03	5%	254	1.43	-	194	2.57	-
m.	238	0.37	-	269	2.43	-	281	3.23	5%

12. French - non-French

h.	174	3.90	5%	261	1.90	-	178	3.63	5%
s.	262	1.97	-	226	0.43	-	257	1.63	-
e.	251	1.23	-	197	2.37	-	202	2.03	-
hy.	223	0.63	-	263	2.03	-	255	1.50	-
k.	249	1.10	-	254	1.43	-	267	2.30	-
p.	247	1.17	-	202	2.03	-	220	0.83	-
d.	227	0.37	-	252	1.30	-	237	0.30	-
m.	243	0.70	-	255	1.50	-	269	2.43	-

13. Non-French - mixed controls

	Likes			Dislikes			Total Choices		
h.	160	4.83	1%	251	1.23	-	210	1.50	-
s.	231	0.10	-	270	2.50	-	255	1.50	-
e.	238	0.37	-	235	0.17	-	241	0.57	-
hy.	258	1.70	-	206	1.77	-	232	0.03	-
k.	237	0.30	-	196	2.43	-	199	2.23	-
p.	288	3.70	5%	173	3.97	-	240	0.50	-
d.	164	4.57	1%	271	2.57	-	173	3.97	5%
m.	207	1.70	-	252	1.30	-	245	0.83	-

14. Non-French - non-French controls

h.	28	3.50	1%	63	1.50	-	28	3.50	1%
s.	59	0.93	-	68	2.21	5%	62	1.36	-
e.	44	1.22	-	45	1.07	-	40	1.79	-
hy.	66	1.93	-	57	0.64	-	64	1.64	-
k.	56	0.50	-	45	1.07	-	45	1.07	-
p.	74	3.07	1%	37	2.22	5%	58	0.78	-
d.	46	0.93	-	57	0.64	-	56	0.50	-
m.	55	0.36	-	56	0.50	6	46	0.93	-

15. St. Laurent Sanatorium - Royal Ottawa Sanatorium

h.	37	2.22	5%	46	0.93	-	37	2.22	5%
s.	62	1.36	-	41	1.65	-	55	0.36	-
e.	61	1.21	-	50	0.36	-	53	0.07	-
hy.	54	0.21	-	52	0.07	-	52	0.07	-
k.	42	1.50	-	67	2.07	-	64	1.64	-
p.	53	0.07	-	53	0.07	-	51	0.22	-
d.	39	1.93	-	55	0.36	-	50	0.36	-
m.	60	1.07	-	50	0.36	-	55	0.36	-

	h	s	e	hy	k	p	d	m
1. Controls	2.20	2.20	1.33	1.13	0.67	1.73	1.00	1.73
	0.93	1.40	1.40	1.93	2.00	1.20	1.60	1.46
2. Alcoholism	2.57	3.00	0.71	1.00	0.57	1.00	1.00	2.14
	0.71	1.28	1.14	2.14	2.43	1.86	2.00	0.43
3. Arthritis	3.40	2.13	0.53	0.67	0.53	1.00	1.87	1.87
	0.47	1.07	2.13	2.07	2.20	2.00	1.00	1.07
4. Asthma	4.57	1.86	1.71	0.86	0.14	0.43	0.57	2.14
	0.57	1.43	1.28	2.00	2.14	2.43	1.28	0.86
5. C. Chest	3.13	1.93	1.80	0.60	0.80	0.87	0.80	2.07
	0.80	1.13	1.20	2.87	2.53	1.67	1.00	0.87
6. Diabetes	3.60	1.47	1.60	1.40	0.53	0.47	1.93	1.00
	0.40	0.67	1.73	2.20	2.13	1.93	0.80	2.13
7. Dyspepsia	3.43	2.43	1.00	0.43	0.71	1.00	0.86	2.14
	0.57	0.43	1.57	2.00	2.71	1.86	2.00	1.00
8. Hypertens.	3.87	2.53	0.80	0.93	0.53	0.73	1.87	0.73
	0.20	0.67	1.73	1.87	2.60	2.07	0.73	2.13
9. Muscle T.	3.57	1.86	1.43	0.57	0.57	0.57	2.00	1.43
	0.43	1.00	1.86	1.86	2.71	2.00	1.14	1.00
10. Obesity	3.28	2.14	0.86	0.43	0.57	1.57	2.00	1.14
	0.86	1.28	1.86	1.57	2.00	1.57	1.00	1.86
11. P. Anaemia	3.73	1.87	1.13	0.53	0.47	0.67	1.73	1.87
	0.20	1.27	1.27	2.20	2.33	2.67	0.93	1.13
12. R.H.D.	3.13	2.53	1.40	0.53	0.27	0.53	1.73	1.87
	1.00	1.13	1.13	2.20	2.73	2.20	0.73	0.87
13. Thyro.	2.93	1.80	2.00	0.33	0.60	0.73	1.60	2.00
	0.40	1.13	1.07	2.80	2.40	1.93	1.07	1.20
14. T.B.	4.07	2.00	0.80	1.40	1.00	0.93	1.00	0.80
	0.27	1.13	1.67	1.60	1.87	1.93	1.73	1.80
15. P. Ulcer	4.07	2.67	1.13	0.47	0.60	0.53	0.60	1.93
	0.60	0.67	1.87	2.27	1.87	2.20	1.47	1.07
16. Anxiety	3.07	0.80	0.73	0.87	0.93	1.20	2.333	2.07
	0.53	2.27	1.80	1.87	2.13	1.67	0.80	0.93
17. Depression	4.00	2.40	0.93	0.87	1.13	0.27	1.80	0.60
	0.33	0.53	1.87	1.73	1.80	2.60	0.80	2.53

1. Alcoholism - Controls

Sum of ranks 1st group	d	Sig.	Sum	d	Sig.	Sum	d	Sig.
Likes			Dislikes			Total Choices		
h. 74	0.93	-	85	0.64	-	77	0.50	-
s. 52	4.07	5%	86	0.78	-	63	2.50	-
e. 109	4.07	5%	89	1.21	-	109	4.07	5%
hy. 87	0.93	-	73	1.07	-	81	0.07	-
k. 89	1.21	-	66	2.07	-	74	0.93	-
p. 94	1.93	-	64	2.36	-	85	0.64	-
d. 80	0.07	-	70	1.50	-	73	1.07	-
m. 74	0.93	-	108	3.93	-	98	2.50	-

2. Alcoholism - Arthritis

h.	145	5.83	1%	179	3.57	-	157	4.03	-
s.	191	2.77	-	174	3.90	-	182	3.37	-
e.	175	3.83	-	149	5.57	1%	153	5.30	1%
hy.	194	2.57	-	165	4.50	5%	178	3.63	-
k.	176	3.77	-	179	3.57	-	180	3.50	-
p.	172	4.03	-	182	3.37	-	175	3.83	-
d.	149	5.57	1%	207	1.70	-	170	4.17	5%
m.	173	3.97	-	161	4.77	5%	170	4.17	5%

3. Alcoholism - Chronic Chest

h.	104	3.36	-	82	0.21	-	97	2.36	-
s.	61	2.79	-	73	1.07	-	57	3.36	-
e.	118	5.36	1%	80	0.07	-	109	4.07	5%
hy.	73	1.07	-	107	3.78	-	101	2.92	-
k.	89	1.21	-	91	1.50	-	100	2.78	-
p.	87	0.93	-	71	1.36	-	72	1.22	-
d.	77	0.50	-	52	4.07	5%	57	3.36	-
m.	91	1.50	-	95	2.07	-	98	2.50	-

4. Alcoholism - Diabetes

	Likes			Dislikes			Total Choices		
h.	108	3.93	-	49	4.50	5%	95	2.07	-
s.	52	4.07	5%	61	2.79	-	45	5.07	5%
e.	105	3.50	-	93	1.78	-	107	3.78	-
hy.	90	1.36	-	72	1.22	-	88	1.07	-
k.	68	1.79	-	64	2.36	-	69	1.64	-
p.	54	3.79	-	79	0.22	-	63	2.50	-
d.	101	2.92	-	46	4.93	5%	72	1.22	-
m.	51	4.22	5%	116	5.07	5%	94	1.93	-

5. Alcoholism - Dyspepsia

h.	63	2.50	5%	48	0.64	-	58	0.78	-
s.	50	0.36	-	37	4.22	1%	38	2.07	-
e.	57	0.64	-	60	1.07	-	55	0.36	-
hy.	42	1.50	-	51	0.22	-	48	0.64	-
k.	54	0.21	-	65	1.78	-	61	1 21	-
p.	57	0.64	-	48	0.64	-	58	0.78	-
d.	52	0.07	-	58	0.78	-	51	0.22	-
m.	56	0.50	-	60	1.07	-	59	0.93	-

6. Alcoholism - Hypertension

h.	116	5.07	5%	56	3.50	-	97	2.36	-
s.	64	2.36	-	57	3.36	-	58	3.22	-
e.	81	0.07	-	95	2.07	-	92	1.64	-
hy.	68	1.79	-	71	1.36	-	71	1.36	-
k.	74	0.93	-	86	0.78	-	83	0.36	-
p.	73	1.07	-	82	0.21	-	74	0.93	-
d.	104	3.36	-	41	5.64	1%	74	0.93	-
m.	47	4.79	5%	119	5.50	1%	89	1.21	-

7. Alcoholism - Obesity

h.	63	1.50	-	52	0.07	-	59	0.93	-
s.	42	1.50	-	49	0.50	-	45	1.07	-
e.	53	0.07	-	60	1.07	-	47	0.79	-
hy.	37	1.21	-	48	0.64	-	42	1.50	-
k.	43	1.36	-	54	0.21	-	54	0.21	-
p.	70	2.50	5%	45	1.07	-	59	0.93	-
d.	71	2.64	5%	41	1.64	-	60	1.07	-
m.	46	0.93	-	66	2.07	-	54	0.21	-

8. Alcoholism - Pernicious Anaemia

	Likes			Dislikes			Total Choices		
h.	91	1.50	-	48	4.64	5%	89	1.21	-
s.	56	3.50	-	58	3.22	-	51	4.22	5%
e.	73	1.07	-	60	2.93	-	53	3.93	-
hy.	49	4.50	5%	74	0.93	-	63	2.50	-
k.	60	2.93	-	83	0.36	-	86	0.78	-
p.	62	2.64	-	78	0.36	-	80	0.07	-
d.	83	0.36	-	36	6.36	1%	55	3.64	-
m.	66	2.07	-	94	1.93	-	76	0.64	--

9. Alcoholism - Rheumatic Heart Disease

h.	105	3.50	-	95	2.07	-	102	3.07	-
s.	66	2.07	-	87	0.93	-	57	3.36	-
e.	110	4.21	5%	84	0.50	-	106	3.64	-
hy.	62	2.64	-	89	1.21	-	80	0.07	-
k.	71	1.36	-	93	1.78	-	84	0.50	-
p.	68	1.79	-	99	2.64	-	79	0.22	-
d.	111	4.36	5%	52	4.07	5%	70	1.50	-
m.	84	0.50	-	96	2.21	-	88	1.07	-

10. Alcoholism - Thyrotoxicosis

h.	93	1.78	-	69	1.64	-	92	1.64	-
s.	54	3.79	-	80	0.07	-	46	4.93	5%
e.	127	6.64	1%	82	0.21	-	113	4.64	5%
hy.	48	4.64	5%	102	3.07	-	85	0.04	-
k.	82	0.21	-	74	0.93	-	87	0.93	-
p.	78	0.36	-	87	0.93	-	96	2.21	-
d.	101	2.92	-	52	4.07	5%	77	0.50	-
m.	88	1.07	-	105	3.50	-	111	4.36	5%

11. Alcoholism - Tuberculosis

h.	112	4.50	5%	55	3.64	-	102	3.07	-
s.	58	3.22	-	80	0.07	-	51	4.22	5%
e.	77	0.50	-	94	1.93	-	98	2.50	-
hy.	97	2.36	-	66	2.07	-	90	1.36	-
k.	91	1.50	-	64	2.36	-	83	0.36	-
p.	81	0.07	-	80	0.07	-	82	0.21	-
d.	78	0.36	-	83	0.36	-	79	0.22	-
m.	52	4.07	5%	112	4.50	5%	80	0.07	-

12. Alcoholism - Peptic Ulcer

	Likes			Dislikes			Total Choices		
h.	106	3.64	-	75	0.79	-	106	3.64	-
s.	62	2.64	-	59	3.07	-	50	4.36	5%
e.	102	3.07	-	91	1.50	-	106	3.64	-
hy.	63	2.50	-	77	0.50	-	70	1.50	-
k.	80	0.07	-	71	1.36	-	65	2.22	-
p.	64	2.36	-	94	1.93	-	68	1.79	-
d.	72	1.22	-	69	1.64	-	61	2.79	-
m.	68	1.79	-	95	2.07	-	83	0.36	-

13. Alcoholism - Anxiety

h.	88	1.07	-	72	1.22	-	86	0.78	-
s.	49	4.50	5%	114	4.78	5%	57	3.36	-
e.	79	0.22	-	95	2.07	-	96	2.21	-
hy.	76	0.64	-	72	1.22	-	69	1.64	-
k.	97	2.36	-	65	2.22	-	90	1.36	-
p.	78	0.36	-	64	2.36	-	64	2.36	-
d.	114	4.78	5%	50	4.36	5%	93	1.78	-
m.	90	1.36	-	104	3.36	-	90	1.36	-

14. Alcoholism - Depression

h.	117	5.21	1%	50	4.36	5%	102	3.07	-
s.	59	3.07	-	53	3.93	-	57	3.36	-
e.	84	0.50	-	97	2.36	-	94	1.93	-
hy.	71	1.36	-	68	1.79	-	73	1.07	-
k.	95	2.21	-	61	2.79	-	87	0.93	-
p.	49	4.50	5%	103	3.21	-	80	0.07	-
d.	107	3.78	-	40	5.79	1%	76	0.64	-
m.	38	6.07	1%	116	5.07	5%	93	1.78	-

15. Arthritis - Controls

h.	179	3.57	5%	253	1.37	-	186	3.10	-
s.	247	0.97	-	247	0.97	-	267	2.30	-
e.	277	2.97	-	209	1.57	-	215	1.17	-
hy.	263	2.03	-	196	2.43	-	236	0.23	-
k.	236	0.23	-	201	2.10	-	220	0.83	-
p.	265	2.17	-	207	1.70	-	250	1.17	-
d.	170	4.17	1%	274	2.77	-	195	2.50	-
m.	215	1.17	-	254	1.43	-	236	0.23	-

16. Arthritis - Diabetes

	Likes			Dislikes			Total Choices		
h.	259	1.77	-	216	1.10	-	239	0.43	-
s.	215	1.17	-	202	2.03	-	204	1.90	-
e.	301	4.57	1%	220	0.83	-	293	4.03	5%
hy.	280	3.17	5%	198	2.30	-	248	1.03	-
k.	236	0.23	-	221	0.77	-	225	0.50	-
p.	198	2.30	-	254	1.37	-	230	0.17	-
d.	238	0.37	-	220	0.83	-	224	0.57	-
m.	179	3.59	5%	273	2.70	-	242	0.63	-

17. Arthritis - Hypertension

h.	252	1.30	-	197	2.37	-	238	0.37	-
s.	262	1.97	-	206	1.77	-	247	0.97	-
e.	250	1.17	-	211	1.43	-	198	2.30	-
hy.	245	0.83	-	192	2.70	-	222	0.70	-
k.	228	0.30	-	241	0.57	-	245	0.83	-
p.	201	2.10	-	252	1.30	-	236	0.23	-
d.	237	0.30	-	207	1.70	-	217	1.03	-
m.	168	4.30	1%	288	3.70	5%	227	0.37	-

18. Arthritis - Pernicious Anaemia

h.	252	1.30	-	210	1.50	-	239	0.43	-
s.	228	0.30	-	251	1.23	-	244	0.77	-
e.	275	2.83	-	185	3.17	5%	196	2.43	-
hy.	220	0.83	-	239	0.43	-	228	0.30	-
k.	234	0.10	-	247	0.97	-	258	1.70	-
p.	212	1.37	-	275	2.83	-	252	1.30	-
d.	223	0.63	-	242	0.63	-	233	0.03	-
m.	243	0.70	-	240	0.50	-	249	1.10	-

19. Arthritis - Rheumatic Heart Disease

h.	221	0.77	-	271	2.57	-	241	0.57	-
s.	265	2.17	-	241	0.57	-	275	2.83	-
e.	189	3.77	5%	178	3.63	5%	225	0.50	-
hy.	234	0.10	-	236	0.23	-	226	0.43	-
k.	211	1.43	-	257	1.63	-	246	0.90	-
p.	202	2.03	-	268	2.37	-	243	0.70	-
d.	217	1.03	-	217	1.03	-	203	1.97	-
m.	252	1.30	-	222	0.70	-	235	0.17	-

20. Arthritis - Tuberculosis

	Likes			Dislikes			Total Choices		
h.	260	1.83	-	229	0.23	-	267	2.30	-
s.	228	0.30	-	238	0.37	-	229	0.23	-
e.	276	2.10	-	229	0.23	-	249	1.10	-
hy.	259	1.77	-	179	3.57	5%	209	1.57	-
k.	239	0.43	-	214	1.23	-	248	1.03	-
p.	229	0.23	-	254	1.43	-	237	0.30	-
d.	208	1.63	-	271	2.57	-	242	0.63	-
m.	177	3.70	5%	276	2.10	-	228	0.30	-

21. Arthritis - Peptic Ulcer

h.	252	1.30	-	251	1.23	-	271	2.57	-
s.	268	2.37	-	215	1.17	-	249	1.10	-
e.	283	3.37	5%	216	1.10	-	249	1.10	-
hy.	224	0.57	-	231	0.10	-	219	0.90	-
k.	244	0.77	-	227	0.37	-	231	0.10	-
p.	208	1.63	-	270	2.50	-	240	0.50	-
d.	178	3.63	5%	266	2.23	-	188	2.97	-
m.	233	0.03	-	250	1.17	-	234	0.10	-

22. Asthma - Controls

h.	37	6.22	1%	91	1.50	-	45	5.07	5%
s.	88	1.07	-	86	0.78	-	98	2.50	-
e.	73	1.07	-	84	0.50	-	71	1.36	-
hy.	92	1.64	-	80	0.07	-	81	0.07	-
k.	97	2.36	-	62	2.64	-	83	0.36	-
p.	114	4.78	5%	44	5.22	1%	93	1.78	-
d.	71	1.36	-	84	0.50	-	84	0.50	-
m.	64	2.36	-	96	2.21	-	75	0.79	-

23. Asthma - Alcoholism

h.	33	2.79	-	57	0.64	-	39	1.93	-
s.	65	1.78	-	47	0.79	-	64	1.64	-
e.	43	1.36	-	53	0.07	-	38	2.07	-
hy.	54	0.21	-	54	0.21	-	54	0.21	-
k.	57	0.64	-	55	0.36	-	56	0.50	-
p.	60	1.07	-	46	0.93	-	52	0.07	-
d.	48	0.64	-	64	1.64	-	54	0.21	-
m.	47	0.79	-	45	1.07	-	88	0.64	-

24. Asthma - Arthritis

	Likes			Dislikes			Total Choices		
h.	60	2.93	-	79	0.22	-	63	2.50	-
s.	79	0.22	-	75	0.79	-	73	1.07	-
e.	54	3.79	-	98	2.50	-	67	1.93	-
hy.	78	0.36	-	88	1.07	-	80	0.07	-
k.	89	1.21	-	86	0.78	-	90	1.36	-
p.	96	2.21	-	58	3.22	-	75	0.79	-
d.	103	3.21	-	64	2.36	-	84	0.50	-
m.	59	3.07	-	78	0.36	-	69	1.64	-

25. Asthma - Chronic Chest

h.	51	4.22	5%	81	0.07	-	50	4.36	5%
s.	82	0.21	-	66	2.07	-	80	0.07	-
e.	89	1.21	-	64	2.36	-	84	0.50	-
hy.	77	0.50	-	109	4.07	5%	97	2.36	-
k.	98	2.50	-	101	2.92	-	107	3.78	-
p.	102	3.07	-	60	2.93	-	75	0.79	-
d.	80	0.07	-	74	0.93	-	75	0.79	-
m.	67	1.93	-	79	0.22	-	88	1.07	-

26. Asthma - Diabetes

h.	65	2.22	-	63	2.50	-	58	3.22	-
s.	69	1.64	-	56	3.50	-	48	4.64	5%
e.	82	0.21	-	93	1.78	-	94	1.93	-
hy.	97	2.36	-	84	0.50	-	91	1.50	-
k.	95	2.07	-	75	0.79	-	84	0.50	-
p.	90	1.36	-	65	2.22	-	64	2.36	-
d.	88	0.78	-	59	3.07	-	81	0.07	-
m.	49	4.50	5%	115	4.93	5%	75	0.79	-

27. Asthma - Dyspepsia

h.	45	1.07	-	51	0.22	-	44	1.22	-
s.	58	0.78	-	38	2.17	-	45	1.07	-
e.	45	1.07	-	59	0.93	-	52	0.07	-
hy.	46	0.93	-	56	0.50	-	47	0.79	-
k.	59	0.93	-	61	1.21	-	62	1.36	-
p.	70	2.50	-	42	1.50	-	57	0.64	-
d.	47	0.79	-	62	1.36	-	48	0.64	-
m.	47	0.79	-	53	0.07	-	56	0.50	-

28. Asthma - Hypertension

	Likes			Dislikes			Total Choices		
h.	79	0.22	-	85	0.64	-	73	1.07	-
s.	99	2.64	-	74	0.93	-	80	0.07	-
e.	67	1.93	-	102	3.07	-	75	0.79	-
hy.	91	1.50	-	80	0.07	-	82	0.21	-
k.	95	2.07	-	105	3.50	-	101	2.92	-
p.	97	2.36	-	79	0.22	-	72	1.22	-
d.	97	2.36	-	66	2.07	-	86	0.78	-
m.	52	4.07	5%	118	5.36	1%	85	0.64	-

29. Asthma - Pernicious Anaemia

h.	63	2.50	-	61	2.79	-	58	3.22	-
s.	75	0.79	-	77	0.50	-	76	0.64	-
e.	67	1.93	-	71	1.36	-	59	3.07	-
hy.	65	2.22	-	87	0.93	-	75	0.79	-
k.	85	0.64	-	90	1.36	-	93	1.78	-
p.	87	0.93	-	90	1.36	-	101	2.92	-
d.	86	0.78	-	62	2.64	-	76	0.64	-
m.	63	2.50	-	81	0.07	-	71	1.36	-

30. Asthma - Rheumatic Heart Disease

h.	53	3.93	-	97	2.36	-	64	2.36	-
s.	94	1.93	-	70	1.50	-	84	0.50	-
e.	82	0.21	-	86	0.78	-	74	0.93	-
hy.	75	0.79	-	91	1.50	-	77	0.50	-
k.	91	1.50	-	95	2.07	-	95	2.07	-
p.	90	1.36	-	84	0.50	-	75	0.79	-
d.	100	2.78	-	64	2.36	-	88	1.07	-
m.	63	2.50	-	84	0.50	-	67	1.93	-

31. Asthma - Thyrotoxicosis

h.	48	4.64	5%	82	0.21	-	45	5.07	5%
s.	74	0.93	-	73	1.07	-	71	1.36	-
e.	87	0.93	-	75	0.79	-	88	1.07	-
hy.	54	3.79	-	108	3.93	-	85	0.64	-
k.	94	1.93	-	87	0.93	-	95	2.07	-
p.	88	1.07	-	71	1.36	-	81	0.07	-
d.	89	1.21	-	67	1.93	-	81	0.07	-
m.	67	1.93	-	88	1.07	-	83	0.36	-

32. Asthma - Tuberculosis

	Likes			Dislikes			Total Choices		
h.	83	0.36	-	75	0.79	-	72	1.22	-
s.	80	0.07	-	82	0.21	-	83	0.36	-
e.	67	1.93	-	91	1.50	-	66	2.07	-
hy.	106	3.64	-	70	1.50	-	84	0.50	-
k.	103	3.21	-	75	0.79	-	103	3.21	-
p.	102	3.07	-	66	2.07	-	88	1.07	-
d.	72	1.22	-	95	2.07	-	88	1.07	-
m.	50	4.36	5%	106	3.64	-	75	0.79	-

33. Asthma - Peptic Ulcer

h.	76	0.64	-	89	1.21	-	78	0.36	-
s.	99	2.64	-	67	1.93	-	80	0.07	-
e.	75	0.79	-	97	2.36	-	80	0.07	-
hy.	78	0.36	-	87	0.93	-	78	0.36	-
k.	98	2.50	-	83	0.36	-	87	0.93	-
p.	86	0.78	-	79	0.22	-	82	0.21	-
d.	69	1.64	-	77	0.50	-	73	1.07	-
m.	65	2.22	-	93	1.78	-	74	0.93	-

34 Asthma - Anxiety

h.	60	2.93	-	84	0.50	-	58	3.22	-
s.	55	3.64	-	109	4.07	5%	79	0.22	-
e.	63	2.50	-	92	1.64	-	73	1.07	-
hy.	82	0.21	-	79	0.22	-	78	0.36	-
k.	108	3.93	-	84	0.50	-	102	3.07	-
p.	94	1.93	-	47	4.79	5%	68	1.79	-
d.	111	4.36	5%	59	3.07	-	95	2.07	-
m.	67	1.93	-	84	0.50	-	76	0.64	-

35. Asthma - Depression

h.	69	1.64	-	57	3.36	-	58	3.22	-
s.	85	0.64	-	51	4.22	5%	66	2.07	-
e.	63	2.50	-	93	1.78	-	66	2.07	-
hy.	79	0.22	-	69	1.64	-	73	1.07	-
k.	106	3.64	-	75	0.79	-	99	2.64	-
p.	70	1.50	-	86	0.78	-	78	0.36	-
d.	102	3.07	-	48	4.64	5%	77	0.50	-
m.	43	5.36	1%	119	5.5.	1%	83	0.36	-

36. Chronic Chest - Controls

	Likes			Dislikes			Total Choices		
h.	185	3.17	5%	265	2.17	-	207	1.70	-
s.	239	0.43	-	267	2.30	-	273	2.70	-
e.	209	1.57	-	280	3.17	5%	239	0.43	-
hy.	271	2.57	-	173	3.97	5%	208	1.63	-
k.	235	0.17	-	208	1.63	-	193	2.63	-
p.	279	3.10	-	225	0.50	-	241	0.57	-
d.	245	0.83	-	273	2.70	-	279	3.10	-
m.	209	1.57	-	270	2.50	-	252	1.30	-

37. Chronic Chest - Arthritis

h.	250	1.17	-	214	1.23	-	239	0.43	-
s.	226	0.43	-	236	0.23	-	240	0.50	-
e.	161	4.77	1%	280	3.17	5%	231	0.10	-
hy.	255	1.50	-	182	3.37	5%	192	2.70	-
k.	240	0.50	-	218	0.97	-	203	1.97	-
p.	235	0.17	-	247	0.97	-	242	0.63	-
d.	302	4.64	1%	241	0.57	-	289	3.77	5%
m.	223	0.63	-	248	1.03	-	223	0.63	-

38 Chronic Chest - Diabetes

h.	263	2.03	-	215	1.17	-	244	0.77	-
s.	214	1.23	-	213	1.30	-	190	2.83	-
e.	228	0.30	-	257	1.63	-	239	0.44	-
hy.	296	4.23	1%	181	3.43	5%	234	0.10	-
k.	226	0.43	-	213	1.30	-	211	1.43	-
p.	192	2.70	-	263	2.03	-	230	0.17	-
d.	305	4.83	1%	213	1.30	-	289	3.77	5%
m.	166	4.43	1%	304	4.77	1%	251	1.23	-

39. Chronic Chest - Hypertension

h.	273	2.70	-	208	1.63	-	258	1.70	-
s.	259	1.77	-	223	0.63	-	247	1.17	-
e.	175	3.83	5%	278	3.03	-	219	0.90	-
hy.	269	2.43	-	177	3.70	5%	182	3.37	-
k.	223	0.63	-	239	0.43	-	218	0.97	-
p.	210	1.50	-	271	2.57	-	246	0.90	-
d.	294	4.10	1%	216	1.10	-	271	2.57	-
m.	160	4.83	1%	303	4.70	1%	239	0.43	-

40. Chronic Chest - Pernicious Anaemia

	Likes			Dislikes			Total Choices		
h.	258	1.70	-	208	1.63	-	246	0.90	-
s.	218	0.97	-	253	1.37	-	234	0.10	-
e.	184	3.23	5%	244	0.77	-	193	2.63	-
hy.	223	0.63	-	183	3.30	5%	195	2.50	-
k.	227	0.37	-	236	0.23	-	212	1.37	-
p.	218	0.97	-	293	4.03	5%	295	4.17	1%
d.	275	2.83	-	226	0.43	-	273	2.70	-
m.	235	0.17	-	254	1.43	-	237	0.30	-

41. Chronic Chest - Rheumatic Heart Disease

h.	233	0.03	-	253	1.37	-	250	1.17	-
s.	264	2.10	-	234	0.10	-	255	1.50	-
e.	228	0.30	-	243	0.70	-	217	1.03	-
hy.	256	1.57	-	178	3.63	5%	167	4.37	1%
k.	200	2.17	-	246	0.90	-	211	1.43	-
p.	195	2.50	-	280	3.17	5%	246	0.90	-
d.	305	4.83	1%	216	1.10	-	272	2.63	-
m.	228	0.30	-	232	0.03	-	225	0.50	-

42. Chronic Chest - Thyrotoxicosis

h.	226	0.43	-	227	0.37	-	214	1.23	-
s.	237	0.30	-	255	1.50	-	239	0.43	-
e.	277	2.97	-	242	0.63	-	266	2.23	-
hy.	241	0.57	-	225	0.50	-	208	1.63	-
k.	233	0.03	-	216	1.10	-	209	1.57	-
p.	237	0.30	-	275	2.83	-	252	1.30	-
d.	304	4.76	1%	256	1.57	-	293	4.03	5%
m.	250	1.17	-	277	2.97	-	265	2.17	-

43. Chronic Chest - Tuberculosis

h.	263	2.03	-	200	2.17	-	264	2.10	-
s.	247	0.97	-	236	0.23	-	241	0.57	-
e.	163	4.63	1%	261	1.90	-	200	2.17	-
hy.	291	3.90	5%	164	4.57	1%	195	2.50	-
k.	243	0.70	-	200	2.17	-	213	1.30	-
p.	229	0.23	-	264	2.10	-	249	1.10	-
d.	245	0.83	-	275	2.80	-	277	2.97	-
m.	154	5.23	1%	271	2.57	-	212	1.37	-

44. Chronic Chest - Peptic Ulcer

	Likes			Dislikes			Total Choices		
h.	271	2.57	-	240	0.50	-	277	2.97	-
s.	287	1.63	-	211	1.43	-	249	1.10	-
e.	200	2.17	-	273	2.70	-	234	0.10	-
hy.	240	0.50	-	184	3.23	5%	175	3.83	5%
k.	230	0.17	-	203	1.97	-	177	3.70	5%
p.	203	1.97	-	271	2.57	-	254	1.43	-
d.	229	0.23	-	254	1.43	-	263	2.03	-
m.	215	1.17	-	262	1.97	-	230	1.97	-

45. Chronic Chest - Anxiety

h.	235	2.17	-	212	1.37	-	231	0.10	-
s.	168	4.30	1%	311	5.23	1%	231	0.10	-
e.	179	3.57	5%	256	1.57	-	209	1.57	-
hy.	264	2.10	-	170	4.17	1%	183	3.30	5%
k.	241	0.57	-	199	2.23	-	219	0.90	-
p.	241	0.57	-	204	1.90	-	221	0.77	-
d.	318	5.70	1%	207	1.70	-	296	4.23	1%
m.	229	0.23	-	235	0.17	-	225	0.50	-

46. Chronic Chest - Depression

h.	265	2.17	-	186	3.10	-	256	1.57	-
s.	232	0.03	-	195	2.50	-	244	0.77	-
e.	179	3.57	5%	269	2.43	-	218	0.97	-
hy.	247	0.97	-	178	3.63	5%	202	2.03	-
k.	254	1.43	-	237	0.30	-	213	1.30	-
p.	167	4.37	1%	279	3.10	-	247	0.97	-
d.	294	4.10	1%	222	0.70	-	273	2.70	-
m.	140	6.17	1%	307	4.96	1%	243	0.70	-

47. Diabetes - Controls

h.	173	3.97	5%	278	3.03	-	170	4.17	1%
s.	258	1.70	-	272	2.63	-	287	3.63	5%
e.	214	1.23	-	205	1.83	-	172	4.03	5%
hy.	207	1.70	-	234	0.10	-	218	0.97	-
k.	246	0.90	-	201	2.10	-	233	0.03	-
p.	292	3.97	5%	184	3.23	5%	313	5.37	1%
d.	167	4.37	1%	275	2.83	-	220	0.83	-
m.	225	0.50	-	191	2.77	-	233	0.03	-

48. Diabetes - Hypertension

	Likes			Dislikes			Total Choices		
h.	219	0.90	-	229	0.23	-	216	1.10	-
s.	190	2.83	-	255	1.50	-	176	3.77	5%
e.	280	3.17	5%	230	0.17	-	276	2.10	-
hy.	275	2.83	-	252	1.30	-	278	3.03	-
k.	249	1.10	-	207	1.70	-	208	1.63	-
p.	229	0.23	-	237	0.30	-	218	0.97	-
d.	239	0.43	-	243	0.70	-	236	0.23	-
m.	252	1.30	-	246	0.90	-	244	0.77	-

49. Diabetes - Pernicious Anaemia

h.	225	0.50	-	181	3.43	5%	221	0.77	-
s.	239	0.43	-	268	2.37	-	281	3.23	5%
e.	201	2.10	-	194	2.57	-	161	4.77	1%
hy.	155	5.17	1%	234	0.10	-	187	3.03	-
k.	205	1.83	-	250	1.17	-	245	0.83	-
p.	262	1.97	-	272	2.63	-	291	3.90	5%
d.	224	0.57	-	238	0.37	-	239	0.43	-
m.	287	3.63	5%	178	3.63	5%	229	0.23	-

50. Diabetes - Rheumatic Heart Disease

h.	272	2.63	-	203	1.97	-	260	1.83	-
s.	182	3.37	5%	209	1.57	-	145	5.83	1%
e.	247	0.97	-	292	4.47	1%	310	5.17	1%
hy.	300	4.50	1%	236	0.23	-	288	3.70	5%
k.	270	2.50	-	200	2.17	-	222	0.70	-
p.	234	0.10	-	226	0.43	-	226	0.43	-
d.	236	0.23	-	280	3.17	5%	272	2.63	-
m.	208	1.63	-	300	4.50	1%	272	2.63	-

51. Diabetes - Thyrotoxicosis

h.	194	2.57	-	227	0.37	-	185	3.17	5%
s.	255	1.50	-	243	0.70	-	276	2.10	-
e.	264	2.10	-	192	2.70	-	211	1.43	-
hy.	134	6.57	1%	254	1.43	-	225	0.50	-
k.	198	2.30	-	222	0.70	-	248	1.03	-
p.	247	0.97	-	223	0.63	-	269	2.43	-
d.	213	1.30	-	254	1.43	-	229	0.23	-
m.	298	4.37	1%	148	5.63	1%	256	1.57	-

52. Diabetes - Tuberculosis

	Likes			Dislikes			Total Choices		
h.	260	1.83	-	233	0.03	-	255	1.50	-
s.	265	2.17	-	267	2.30	-	301	4.57	1%
e.	173	3.97	5%	224	0.57	-	189	2.90	-
hy.	217	1.03	-	181	3.43	5%	203	1.97	-
k.	247	0.97	-	227	0.37	-	241	0.57	-
p.	263	2.03	-	223	0.63	-	262	1.97	-
d.	151	5.43	1%	296	4.23	1%	220	0.83	-
m.	206	1.77	-	219	0.90	-	200	2.17	-

53. Diabetes - Peptic Ulcer

h.	245	0.83	-	263	2.03	-	257	1.63	-
s.	297	4.30	1%	234	0.10	-	272	2.63	-
e.	206	1.77	-	213	1.30	-	185	3.17	5%
hy.	168	4.30	1%	234	0.10	-	180	3.50	5%
k.	228	0.30	-	239	0.43	-	223	0.63	-
p.	232	0.03	-	271	2.57	-	252	1.30	-
d.	165	4.50	1%	264	2.10	-	201	2.10	-
m.	245	0.83	-	198	2.30	-	205	1.83	-

54. Dyspepsia - Controls

h.	61	2.79	-	96	2.21	-	69	1.64	-
s.	74	0.93	-	109	4.07	5%	98	2.50	-
e.	88	1.07	-	70	1.50	-	79	0.22	-
hy.	106	3.64	-	81	0.07	-	99	2.64	-
k.	80	0.07	-	54	3.79	-	60	2.93	-
p.	92	1.64	-	66	2.07	-	79	0.22	-
d.	72	1.22	-	64	2.36	-	20	8.64	1%
m.	76	0.64	-	99	2.64	-	85	0.64	-

55. Dyspepsia - Arthritis

h.	78	0.36	-	81	0.07	-	77	0.50	-
s.	72	1.22	-	111	4.36	5%	85	0.64	-
e.	64	2.36	-	88	1.07	-	79	0.22	-
hy.	92	1.64	-	90	1.36	-	97	2.36	-
k.	74	0.93	-	68	1.79	-	67	1.93	-
p.	69	1.64	-	82	0.21	-	76	0.64	-
d.	115	4.93	5%	42	5.50	1%	84	0.50	-
m.	67	1.93	-	85	0.64	-	74	0.93	-

56. Dyspepsia - Chronic Chest

	Likes			Dislikes			Total Choices		
h.	76	0.64	-	94	1.93	-	78	0.36	-
s.	65	2.22	-	108	3.93	-	89	1.21	-
e.	111	4.36	5%	70	1.50	-	86	0.78	-
hy.	85	0.64	-	109	4.07	5%	110	4.21	5%
k.	77	0.50	-	75	0.79	-	78	0.36	-
p.	67	1.93	-	78	0.36	-	63	2.50	-
d.	88	1.07	-	46	4.93	5%	57	3.36	-
m.	74	0.93	-	82	0.21	-	78	0.36	-

57. Dyspepsia - Diabetes

h.	82	0.21	-	77	0.50	-	85	0.64	-
s.	58	3.22	-	101	2.92	-	65	2.22	-
e.	106	3.64	-	84	0.50	-	94	1.93	-
hy.	120	5.64	1%	86	0.78	-	110	4.21	5%
k.	75	0.79	-	62	2.64	-	63	2.50	-
p.	55	3.64	-	96	2.21	-	61	2.79	-
d.	110	4.21	5%	35	6.50	1%	79	0.22	-
m.	50	4.36	5%	122	5.93	1%	84	0.50	-

58. Dyspepsia - Hypertension

h.	86	0.78	-	67	1.93	-	82	0.21	-
s.	80	0.07	-	57	3.36	-	86	0.78	-
e.	48	4.67	5%	73	1.07	-	71	1.36	-
hy.	96	2.21	-	80	0.07	-	91	1.50	-
k.	66	2.07	-	71	1.36	-	56	3.50	-
p.	56	3.50	-	98	2.50	-	67	1.93	-
d.	102	3.07	-	37	6.22	1%	86	0.78	-
m.	38	6.07	1%	115	4.93	5%	74	0.93	-

59. Dyspepsia - Pernicious Anaemia

h.	82	0.27	-	75	0.79	-	77	0.50	-
s.	69	1.64	-	112	4.50	5%	88	1.07	-
e.	85	0.64	-	61	2.79	-	62	2.64	-
hy.	81	0.07	-	89	0.21	-	82	0.21	-
k.	73	1.07	-	75	0.79	-	66	2.07	-
p.	59	3.07	-	105	3.50	-	96	2.21	-
d.	101	2.92	-	40	5.79	1%	80	0.07	-
m.	77	0.50	-	88	1.07	-	76	0.64	-

60. Dyspepsia - Rheumatic Heart Disease

	Likes			Dislikes			Total Choices		
h.	74	0.93	-	98	2.50	-	86	0.78	-
s.	75	0.79	-	118	5.36	1%	109	4.07	5%
e.	101	2.92	-	63	2.50	-	80	0.07	-
hy.	83	0.36	-	86	0.78	-	95	2.07	-
k.	65	2.22	-	78	0.36	-	66	2.07	-
p.	51	4.22	5%	99	2.64	-	68	1.79	-
d.	99	2.64	-	43	5.36	1%	68	1.79	-
m.	83	0.36	-	80	0.07	-	67	1.93	-

61. Dyspepsia - Thyrotoxicosis

h.	66	2.07	-	79	0.22	-	77	0.50	-
s.	60	2.93	-	105	3.50	-	80	0.07	-
e.	118	5.36	1%	62	2.64	-	92	1.64	-
hy.	68	1.79	-	104	3.36	-	102	3.07	-
k.	69	1.64	-	59	3.07	-	66	2.07	-
p.	60	2.93	-	92	1.64	-	73	1.07	-
d.	101	2.92	-	44	5.22	1%	70	1.50	-
m.	74	0.93	-	85	0.64	-	94	1.93	-

62. Dyspepsia - Tuberculosis

h.	89	1.21	-	72	1.22	-	90	1.36	-
s.	66	2.07	-	102	3.07	-	98	2.50	-
e.	62	2.64	-	77	0.50	-	68	1.79	-
hy.	110	4.21	5%	68	1.79	-	95	2.07	-
k.	87	0.93	-	56	3.50	-	64	2.36	-
p.	65	2.22	-	91	1.50	-	76	0.64	-
d.	84	0.50	-	69	1.64	-	72	1.22	-
m.	35	6.50	1%	100	2.78	-	63	2.50	-

63. Dyspepsia - Peptic Ulcer

h.	93	1.78	-	91	1.50	-	95	2.07	-
s.	80	0.07	-	97	2.36	-	90	1.36	-
e.	94	1.93	-	73	1.07	-	80	0.07	-
hy.	81	0.07	-	86	0.78		87	0.93	-
k.	72	1.22	-	61	2.79	-	62	2.64	-
p.	55	3.64	-	94	1.93	-	74	0.93	-
d.	69	1.64	-	63	2.50	-	61	2.79	-
m.	72	1.22	-	85	0.64	-	71	1.36	-

64. Dyspepsia - Anxiety

	Likes			Dislikes			Total Choices		
h.	75	0.79	-	76	0.64	-	74	0.93	-
s.	37	6.22	1%	126	6.50	1%	94	1.93	-
e.	64	2.36	-	78	0.36	-	70	1.50	-
hy.	100	2.78	-	79	0.22	-	89	1.21	-
k.	86	0.78	-	68	2.21	-	71	1.36	-
p.	70	1.50	-	67	2.07	-	60	2.93	-
d.	119	5.50	1%	50	4.36	5%	88	1.07	-
m.	72	1.22	-	88	1.07	-	81	0.07	-

65. Dyspepsia - Depression

h.	88	1.07	-	60	2.93	-	85	0.64	-
s.	71	1.36	-	75	0.79	-	77	0.50	-
e.	72	1.22	-	66	2.07	-	73	1.07	-
hy.	86	0.78	-	60	2.93	-	86	0.78	-
k.	89	1.21	-	75	0.79	-	64	2.36	-
p.	42	5.50	1%	105	3.50	-	67	1.93	-
d.	106	3.64	-	34	6.64	1%	70	1.50	-
m.	32	6.93	1%	119	5.50	1%	82	0.21	-

66. Hypertension - Controls

h.	160	4.83	1%	270	2.50	-	191	2.57	-
s.	205	1.83	-	282	3.30	5%	241	0.57	-
e.	263	2.03	-	211	1.43	-	239	0.43	-
hy.	248	1.03	-	233	0.03	-	248	1.03	-
k.	242	0.63	-	192	2.70	-	217	1.03	-
p.	283	3.37	5%	178	3.63	5%	233	0.03	-
d.	180	3.50	5%	277	2.97	-	223	0.63	-
m.	275	2.84	-	193	2.63	-	246	0.90	-

67. Hypertension - Pernicious Anaemia

h.	222	0.70	-	205	1.83	-	215	1.17	-
s.	201	2.10	-	271	2.57	-	228	0.30	-
e.	256	1.57	-	189	2.90	-	205	1.83	-
hy.	196	2.43	-	250	1.17	-	236	0.23	-
k.	227	0.37	-	250	1.17	-	230	0.17	-
p.	236	0.23	-	251	1.23	-	275	2.83	-
d.	224	0.57	-	254	1.43	-	242	0.63	-
m.	306	4.90	1%	192	2.70	-	233	0.03	-

68. Hypertension - Thyrotoxicosis

	Likes			Dislikes			Total Choices		
h.	175	3.83	5%	258	1.70	-	187	3.03	-
s.	188	2.97	-	265	2.17	-	220	0.83	-
e.	334	6.77	1%	200	2.17	-	282	3.30	5%
hy.	193	2.63	-	301	4.57	1%	266	2.33	-
k.	232	0.03	-	215	1.17	-	225	0.50	-
p.	249	1.10	-	235	0.17	-	237	0.30	-
d.	219	0.90	-	239	0.43	-	225	0.50	-
m.	317	5.63	1%	178	3.63	5%	252	1.30	-

69. Hypertension - Peptic Ulcer

h.	238	0.37	-	259	1.77	-	252	1.30	-
s.	229	0.23	-	236	0.23	-	240	0.50	-
e.	266	2.23	-	229	0.23	-	255	1.50	-
hy.	210	1.50	-	244	0.77	-	229	0.23	-
k.	229	0.23	-	202	2.03	-	210	1.50	-
p.	201	2.10	-	270	2.50	-	222	0.70	-
d.	175	3.83	5%	266	2.23	-	211	1.43	-
m.	267	2.30	-	195	2.50	-	241	0.57	-

70. Hypertension - Anxiety

h.	174	3.90	5%	243	0.70	-	203	1.97	-
s.	150	5.50	1%	324	6.10	1%	234	0.10	-
e.	234	0.10	-	232	0.03	-	227	0.37	-
hy.	228	0.30	-	218	0.97	-	224	0.57	-
k.	257	1.63	-	212	1.37	-	237	0.30	-
p.	263	2.03	-	183	3.30	5%	219	0.90	-
d.	258	1.70	-	236	0.23	-	266	2.23	-
m.	317	5.63	1%	156	5.10	1%	231	0.10	-

71. Hypertension - Depression

h.	241	0.57	-	239	0.43	-	229	0.23	-
s.	230	0.17	-	237	0.30	-	228	0.30	-
e.	247	0.97	-	244	0.77	-	249	1.10	-
hy.	250	1.17	-	195	2.50	-	236	0.23	-
k.	276	2.90	-	195	2.50	-	236	0.23	-
p.	216	1.10	-	285	3.50	5%	251	1.23	-
d.	238	0.37	-	242	0.63	-	233	0.03	-
m.	233	0.03	-	271	2.57	-	258	1.70	-

72. Muscle Tension - Controls

	Likes			Dislikes			Total Choices		
h.	60	2.93	-	102	3.07	-	65	2.22	-
s.	84	0.50	-	97	2.36	-	82	0.21	-
e.	80	0.07	-	75	0.79	-	70	1.50	-
hy.	95	2.07	-	81	0.07	-	66	2.07	-
k.	84	0.50	-	56	3.50	-	63	2.50	-
p.	112	4.50	5%	65	2.22	-	96	2.21	-
d.	42	5.50	1%	95	2.07	-	64	2.36	-
m.	91	1.50	-	94	1.93	-	103	3.21	-

73. Muscle Tension - Alcoholism

h.	53	0.07	-	46	0.93	-	51	0.22	-
s.	43	1.36	-	46	0.93	-	42	1.50	-
e.	68	2.21	-	58	0.78	-	65	1.78	-
hy.	45	1.07	-	50	0.36	-	49	0.50	-
k.	59	0.93	-	62	1.36	-	59	0.93	-
p.	43	1.36	-	51	0.22	-	48	0.64	-
d.	71	3.64	1%	39	1.93	-	58	0.78	-
m.	42	1.50	-	60	1.07	-	46	0.93	-

74. Muscle Tension - Arthritis

h.	80	0.07	-	93	1.78	-	81	0.07	-
s.	81	0.07	-	86	0.78	-	85	0.64	-
e.	60	2.93	-	95	2.07	-	73	1.07	-
hy.	82	0.21	-	76	0.64	-	86	0.78	-
k.	81	0.07	-	66	2.07	-	77	0.50	-
p.	96	2.21	-	74	0.93	-	76	0.64	-
d.	78	0.36	-	73	1.07	-	70	1.50	-
m.	101	2.92	-	88	1.07	-	100	2.78	-

75. Muscle Tension - Asthma

h.	59	0.93	-	63	1.50	-	56	0.50	-
s.	56	0.50	-	59	0.93	-	58	0.78	-
e.	58	0.78	-	47	0.79	-	53	0.07	-
hy.	56	0.50	-	53	0.07	-	55	0.36	-
k.	48	0.64	-	40	1.79	-	42	1.50	-
p.	50	0.36	-	62	1.36	-	52	0.07	-
d.	41	1.65	-	61	1.21	-	45	1.07	-
m.	63	1.50	-	57	0.64	-	61	1.21	-

76. Muscle Tension - Chronic Chest

	Likes			Dislikes			Total Choices		
h.	73	1.07	-	95	2.07	-	79	0.22	-
s.	81	0.07	-	80	0.07	-	82	0.21	-
e.	93	1.78	-	66	2.07	-	78	0.36	-
hy.	69	1.64	-	107	3.78	-	102	3.07	-
k.	87	0.93	-	74	0.93	-	78	0.36	-
p.	93	1.78	-	73	1.07	-	80	0.07	-
d.	35	6.50	1%	73	1.07	-	39	5.93	1%
m.	101	2.92	-	78	0.36	-	100	2.78	-

77. Muscle Tension - Diabetes

h.	77	0.50	-	81	0.07	-	80	0.07	-
s.	65	1.22	-	66	2.07	-	60	2.93	-
e.	95	2.07	-	81	0.07	-	90	1.36	-
hy.	108	3.93	-	80	0.07	-	102	3.07	-
k.	81	0.07	-	60	2.93	-	60	2.93	-
p.	79	0.22	-	84	0.50	-	69	1.64	-
d.	68	1.79	-	66	2.07	-	60	2.93	-
m.	77	0.50	-	115	4.93	5%	101	2.92	-

78. Muscle Tension - Dyspepsia

h.	53	0.07	-	55	0.36	-	54	0.21	-
s.	60	1.07	-	41	1.65	-	51	0.22	-
e.	47	0.79	-	54	0.21	-	49	0.50	-
hy.	49	0.50	-	52	0.07	-	50	0.36	-
k.	57	0.93	-	53	0.07	-	53	0.07	-
p.	62	1.36	-	51	0.22	-	60	1.07	-
d.	39	1.93	-	67	2.07	-	49	0.50	-
m.	66	1.93	-	53	0.07	-	65	1.78	-

79. Muscle Tension - Hypertension

h.	87	0.93	-	80	0.07	-	84	0.50	-
s.	98	2.50	-	64	2.36	-	87	0.93	-
e.	56	3.50	-	83	0.36	-	67	1.93	-
hy.	85	0.64	-	79	0.22	-	84	0.50	-
k.	78	0.36	-	75	0.79	-	72	1.22	-
p.	91	1.50	-	88	1.07	-	85	0.64	-
d.	76	0.64	-	66	2.07	-	70	1.50	-
m.	60	2.93	-	111	4.36	5%	99	2.64	-

80. Muscle Tension - Pernicious Anaemia

	Likes			Dislikes			Total Choices		
h.	87	0.93	-	88	1.07	-	84	0.50	-
s.	72	1.22	-	83	0.36	-	83	0.36	-
e.	73	1.07	-	52	4.07	5%	52	4.07	5%
hy.	69	1.64	-	86	0.78	-	77	0.50	-
k.	74	0.93	-	68	1.79	-	67	1.93	-
p.	84	0.50	-	101	2.92	-	114	4.78	5%
d.	63	2.50	-	76	0.64	-	66	2.07	-
m.	99	2.64	-	87	0.93	-	78	0.36	-

81. Muscle Tension - Rheumatic Heart Disease

h.	75	0.79	-	105	3.50	-	86	0.78	-
s.	94	1.93	-	83	0.36	-	101	2.92	-
e.	88	1.07	-	55	3.64	-	65	2.22	-
hy.	66	2.07	-	77	0.50	-	84	0.50	-
k.	68	1.79	-	79	0.22	-	69	1.64	-
p.	78	0.36	-	97	2.36	-	81	0.07	-
d.	67	1.93	-	62	2.64	-	55	3.64	-
m.	100	2.78	-	78	0.36	-	96	2.21	-

82. Muscle Tension - Thyrotoxicosis

h.	68	1.79	-	87	0.93	-	65	2.22	-
s.	79	0.22	-	87	0.93	-	80	0.07	-
e.	105	3.50	-	55	3.64	-	82	0.21	-
hy.	58	3.22	-	93	1.78	-	90	1.36	-
k.	80	0.07	-	70	1.50	-	70	1.50	-
p.	87	0.93	-	86	0.78	-	93	1.78	-
d.	61	2.79	-	75	0.79	-	63	2.50	-
m.	107	3.78	-	90	1.36	-	112	4.50	5%

83. Muscle Tension - Tuberculosis

h.	89	1.21	-	83	0.36	-	87	0.93	-
s.	87	0.93	-	88	1.07	-	98	2.50	-
e.	62	2.69	-	88	1.07	-	73	1.07	-
hy.	104	3.36	-	72	1.22	-	93	1.78	-
k.	94	1.93	-	54	3.79	-	68	1.79	-
p.	94	1.93	-	81	0.07	-	92	1.64	-
d.	45	5.07	5%	100	2.78	-	65	2.22	-
m.	69	1.64	-	95	2.07	-	100	2.78	-

84. Muscle Tension - Peptic Ulcer

	Likes			Dislikes			Total Choices		
h.	87	0.93	-	95	2.07	-	89	1.21	-
s.	99	2.64	-	74	0.93	-	87	0.93	-
e.	79	0.22	-	73	1.07	-	67	1.93	-
hy.	73	1.07	-	85	0.64	-	76	0.64	-
k.	82	0.21	-	55	3.64	-	58	3.22	-
p.	75	0.79	-	91	1.50	-	85	0.64	-
d.	40	5.79	1%	93	1.78	-	48	4.64	5%
m.	91	1.50	-	95	2.07	-	86	0.78	-

85. Muscle Tension - Anxiety

h.	72	1.22	-	85	0.64	-	73	1.07	-
s.	47	4.79	5%	125	6.36	1%	92	1.64	-
e.	56	3.50	-	79	0.22	-	69	1.64	-
hy.	84	0.50	-	56	3.50	-	81	0.07	-
k.	89	1.21	-	68	1.79	-	75	0.79	-
p...	98	2.50	-	64	2.36	-	77	0.50	-
d.	86	0.78	-	66	2.07	-	74	0.93	-
m.	101	2.92	-	93	1.78	-	106	3.64	-

86. Muscle Tension - Depression

h.	89	1.21	-	73	1.07	-	85	0.64	-
s.	83	0.36	-	60	2.93	-	75	0.79	-
e.	61	2.79	-	76	0.64	-	59	3.07	-
hy.	80	0.07	-	75	0.79	-	77	0.50	-
k.	95	2.07	-	58	3.22	-	66	2.07	-
p.	68	1.79	-	98	2.50	-	85	0.64	-
d..	70	1.50	-	63	2.50	-	59	3.07	-
m.	58	3.22	-	118	5.36	1%	109	4.07	5%

87. Obesity - Controls

h.	54	3.79	-	82	0.21	-	55	3.64	-
s.	87	0.93	-	95	2.07	-	83	0.36	-
e.	94	1.93	-	78	0.36	-	93	1.78	-
hy.	107	3.64	-	89	1.21	-	100	2.78	-
k.	84	0.50	-	64	2.36	-	76	0.64	-
p.	79	0.22	-	70	1.50	-	79	0.22	-
d.	46	4.93	5%	100	2.78	-	59	3.07	-
m.	94	1.93	-	70	1.50	-	97	2.36	-

88. Obesity - Arthritis

	Likes			Dislikes			Total Choices		
h.	82	0.21	-	74	0.93	-	76	0.64	-
s.	79	0.22	-	80	0.07	-	71	1.36	-
e.	74	0.93	-	93	1.78	-	91	1.50	-
hy.	95	2.07	-	98	2.50	-	97	2.36	-
k.	94	1.93	-	74	0.93	-	69	1.64	-
p.	57	3.36	-	81	0.07	-	74	0.93	-
d.	83	0.36	-	73	1.07	-	62	2.64	-
m.	96	2.21	-	59	3.07	-	84	0.50	-

89. Obesity - Asthma

h.	66	1.93	-	48	0.64	-	65	1.78	-
s.	50	0.36	-	60	1.07	-	53	0.07	-
e.	61	1.21	-	45	1.07	-	60	1.07	-
hy.	61	1.21	-	57	0.64	-	59	0.93	-
k.	43	1.36	-	47	0.79	-	45	1.07	-
p.	34	2.64	5%	64	1.64	-	50	0.36	-
d.	39	1.93	-	56	0.50	-	46	0.93	-
m.	67	2.07	-	40	1.79	-	58	0.78	-

90. Obesity - Chronic Chest

h.	74	0.93	-	79	0.22	-	71	1.36	-
s.	76	0.64	-	84	0.50	-	78	0.36	-
e.	109	4.07	5%	65	2.22	-	96	2.21	-
hy.	87	0.93	-	108	3.93	-	116	5.07	5%
k.	82	0.21	-	85	0.64	-	97	2.36	-
p.	61	2.79	-	81	0.07	-	68	1.79	-
d.	36	6.36	1%	78	0.36	-	44	5.22	1%
m.	109	4.07	5%	51	4.22	5%	91	1.50	-

91. Obesity - Diabetes

h.	85	0.64	-	56	3.50	-	78	0.36	-
s.	56	3.50	-	57	3.36	-	48	4.64	5%
e.	93	1.78	-	78	0.36	-	102	3.07	-
hy.	111	4.36	5%	85	0.64	-	107	3.64	-
k.	71	1.36	-	61	2.79	-	67	1.93	-
p.	47	4.79	5%	91	1.50	-	56	3.50	-
d.	67	1.93	-	60	2.93	-	59	3.07	-
m.	75	0.79	-	90	1.36	-	86	0.78	-

92. Obesity - Dyspepsia

	Likes			Dislikes			Total Choices		
h.	52	0.07	-	42	1.50	-	49	0.50	-
s.	50	0.36	-	31	3.07	1%	42	1.50	-
e.	50	0.36	-	50	0.36	-	52	0.07	-
hy.	50	0.36	-	48	0.64	-	49	0.50	-
k.	51	0.22	-	57	0.64	-	53	0.07	-
p.	38	2.07	-	49	0.50	-	44	1.22	-
d.	33	2.79	5%	59	0.93	-	38	2.17	-
m.	60	1.07	-	38	2.17	-	44	1.22	-

93. Obesity - Hypertension

h.	90	1.36	-	55	3.64	-	73	1.07	-
s.	97	2.36	-	64	2.36	-	77	0.50	-
e.	73	1.07	-	74	0.93	-	81	0.07	-
hy.	95	2.07	-	76	0.64	-	92	1.64	-
k.	72	1.22	-	83	0.36	-	84	0.50	-
p.	54	3.79	-	91	1.50	-	71	1.36	-
d.	69	1.64	-	73	1.07	-	64	2.36	-
m.	75	0.79	-	80	0.07	-	74	0.93	-

94. Obesity - Muscle Tension

h.	54	0.21	-	47	0.79	-	52	0.07	-
s.	47	0.79	-	50	0.36	-	50	0.36	-
e.	59	0.93	-	54	0.21	-	58	0.78	-
hy.	53	0.07	-	57	0.64	-	59	0.93	-
k.	54	0.21	-	64	1.64	-	61	1.21	-
p.	38	2.07	-	56	0.50	-	46	0.93	-
d.	54	0.21	-	51	0.22	-	49	0.50	-
m.	54	0.21	-	42	1.50	-	45	1.07	-

95. Obesity - Pernicious Anaemia

h.	86	0.78	-	52	4.07	5%	73	1.07	-
s.	66	2.07	-	81	0.07	-	72	1.22	-
e.	86	0.78	-	59	3.07	-	75	0.79	-
hy.	77	0.50	-	90	1.36	-	87	0.93	-
k.	66	2.07	-	82	0.21	-	81	0.07	-
p.	45	5.07	5%	110	4.21	5%	96	2.21	-
d.	64	2.36	-	65	2.22	-	62	2.64	-
m.	103	3.21	-	58	3.22	-	83	0.36	

96. Obesity - Rheumatic Heart Disease

	Likes			Dislikes			Total Choices		
h.	77	0.50	-	85	0.64	-	82	0.21	-
s.	92	1.64	-	88	1.07	-	91	1.50	-
e.	100	2.78	-	61	2.79	-	93	1.78	-
hy.	88	1.07	-	97	2.36	-	92	1.64	-
k.	65	2.22	-	93	1.78	-	80	0.07	-
p.	42	5.50	1%	98	2.50	-	70	1.50	-
d.	68	1.79	-	70	1.50	-	59	3.07	-
m.	108	3.93	-	54	3.79	-	88	1.07	-

97. Obesity - Thyrotoxicosis

h.	69	1.64	-	73	1.07	-	63	2.50	-
s.	75	0.79	-	83	0.36	-	72	1.22	-
e.	116	5.07	5%	68	1.79	-	103	3.21	-
hy.	79	0.22	-	108	3.93	-	105	3.50	-
k.	86	0.78	-	79	0.22	-	84	0.50	-
p.	54	3.79	-	101	2.92	-	84	0.50	-
d.	74	0.93	-	76	0.64	-	65	2.22	-
m.	115	4.93	5%	67	1.93	-	110	4.21	5%

98. Obesity - Tuberculosis

h.	97	2.36	-	66	2.07	-	83	0.36	-
s.	84	0.50	-	81	0.07	-	81	0.07	-
e.	78	0.36	-	85	0.64	-	83	0.36	-
hy.	116	5.07	5%	76	0.64	-	97	2.36	-
k.	91	1.50	-	69	1.64	-	81	0.07	-
p.	58	3.22	-	89	1.21	-	80	0.07	-
d.	48	4.64	-	105	3.50	-	59	3.07	-
m.	72	1.22	-	86	0.78	-	83	0.36	-

99. Obesity - Peptic Ulcer

h.	99	2.64	-	75	0.79	-	96	2.21	-
s.	97	2.36	-	69	1.64	-	83	0.36	-
e.	95	2.07	-	81	0.07	-	92	1.64	-
hy.	85	0.64	-	93	1.78	-	89	1.21	-
k.	79	0.22	-	63	2.50	-	68	1.79	-
p.	52	4.07	5%	98	2.50	-	73	1.07	-
d.	50	4.36	5%	84	0.50	-	55	3.64	-
m.	89	1.21	-	69	1.64	-	72	1.22	-

100. Obesity - Anxiety

	Likes			Dislikes			Total Choices		
h.	75	0.79	-	67	1.93	-	71	1.22	-
s.	39	5.93	1%	121	5.80	1%	81	0.07	-
e.	78	0.36	-	85	0.64	-	83	0.36	-
hy.	100	2.78	-	84	0.50	-	91	1.50	-
k.	92	1.64	-	71	1.36	-	88	1.07	-
p.	66	2.07	-	77	0.50	-	66	2.07	-
d.	83	0.36	-	64	2.36	-	71	1.36	-
m.	110	4.21	5%	52	4.07	5%	86	0.78	-

101. Obesity - Depression

h.	97	2.36	-	53	3.93	-	83	0.36	-
s.	81	0.07	-	51	4.22	5%	66	2.07	-
e.	80	0.07	-	85	0.64	-	80	0.07	-
hy.	98	2.50	-	78	0.36	-	89	1.21	-
k.	96	2.21	-	64	2.36	-	75	0.79	-
p.	34	6.64	1%	112	4.50	5%	76	0.64	-
d.	71	1.36	-	64	2.36	-	59	3.07	-
m.	66	2.07	-	105	3.50	-	89	1.21	-

102. Pernicious Anaemia - Controls

h.	169	4.23	1%	265	2.17	-	188	2.97	-
s.	258	1.70	-	238	0.37	-	260	1.83	-
e.	249	1.10	-	251	1.23	-	261	1.90	-
hy.	272	2.63	-	201	2.10	-	247	0.97	-
k.	252	1.17	-	197	2.37	-	215	1.17	-
p.	295	4.17	1%	159	4.90	1%	198	2.30	-
d.	189	2.90	-	272	2.63	-	222	0.70	-
m.	214	1.23	-	259	1.77	-	234	0.10	-

103. Pernicious Anaemia - Rheumatic Heart Disease

h.	205	1.83	-	260	1.83	-	238	0.37	-
s.	257	1.63	-	194	2.57	-	226	0.43	-
e.	243	0.70	-	254	1.43	-	255	1.50	-
hy.	224	0.57	-	223	0.63	-	212	1.37	-
k.	217	1.03	-	243	0.70	-	229	0.23	-
p.	224	0.57	-	183	3.30	5%	182	3.37	5%
d.	220	0.83	-	229	0.23	-	212	1.37	-
m.	217	1.03	-	198	2.30	-	205	1.83	-

104. Pernicious Anaemia - Thyrotoxicosis

	Likes			Dislikes			Total Choices		
h.	162	4.70	1%	295	4.17	1%	211	1.43	-
s.	248	1.03	-	236	0.23	-	233	0.03	-
e.	311	5.23	1%	243	0.70	-	282	3.30	5%
hy.	215	1.17	-	292	3.97	5%	250	1.17	-
k.	239	0.43	-	206	1.77	-	233	0.03	-
p.	243	0.70	-	201	2.10	-	201	2.10	-
d.	247	0.97	-	249	1.10	-	227	0.23	-
m.	267	2.30	-	243	0.70	-	247	0.97	-

105. Pernicious Anaemia - Tuberculosis

h.	253	1.37	-	264	2.10	-	260	1.83	-
s.	249	1.10	-	235	0.17	-	249	1.10	-
e.	218	0.97	-	275	2.72	-	258	1.70	-
hy.	312	5.30	1%	212	1.37	-	253	1.37	-
k.	279	3.10	-	203	1.97	-	226	0.43	-
p.	258	1.70	-	192	2.70	-	209	1.57	-
d.	199	4.43	1%	282	3.30	5%	249	1.10	-
m.	174	3.90	5%	269	2.43	-	218	0.97	-

106. Pernicious Anaemia - Peptic Ulcer

h.	247	0.97	-	241	0.57	-	266	2.23	-
s.	277	2.97	-	214	1.23	-	240	0.50	-
e.	251	1.23	-	282	3.30	5%	278	3.03	-
hy.	226	0.43	-	231	0.10	-	233	0.03	-
k.	240	0.50	-	207	1.70	-	201	2.10	-
p.	206	1.77	-	194	2.57	-	207	1.70	-
d.	181	3.43	5%	258	1.70	-	217	1.03	-
m.	217	1.03	-	223	0.63	-	222	0.70	-

107. Pernicious Anaemia - Anxiety

h.	249	1.10	-	200	2.17	-	244	0.77	-
s.	274	2.77	-	163	4.63	1%	231	0.10	-
e.	243	0.70	-	187	3.03	-	218	0.97	-
hy.	198	2.30	-	254	1.43	-	238	0.37	-
k.	180	3.50	5%	245	0.83	-	223	0.63	-
p.	223	0.63	-	297	4.30	1%	283	3.37	5%
d.	196	2.43	-	242	0.63	-	210	1.50	-
m.	218	0.97	-	229	0.23	-	227	0.37	-

108. Pernicious Anaemia - Depression

	Likes			Dislikes			Total Choices		
h.	216	1.10	-	223	0.63	-	212	1.37	-
s.	187	3.03	-	273	2.70	-	230	0.17	-
e.	222	0.70	-	187	3.03	-	199	2.23	-
hy.	192	2.70	-	227	0.37	-	209	1.57	-
k.	195	2.50	-	246	0.90	-	193	2.63	-
p.	259	1.77	-	224	0.57	-	279	3.10	-
d.	216	1.10	-	250	1.17	-	241	0.57	-
m.	284	3.43	5%	171	4.10	1%	206	1.77	-

109. Rheumatic Heart Disease - Controls

h.	267	2.30	-	241	0.57	-	291	3.90	5%
s.	242	0.63	-	215	1.17	-	229	0.23	-
e.	244	0.77	-	211	1.43	-	221	0.77	-
hy.	192	2.70	-	244	0.77	-	207	1.70	-
k.	201	2.10	-	275	2.83	-	252	1.30	-
p.	162	4.70	1%	291	3.90	5%	218	0.97	-
d.	302	4.64	1%	183	3.30	5%	227	0.37	-
m.	250	1.17	-	196	2.43	-	213	1.30	-

110. Rheumatic Heart Disease - Hypertension

h.	280	3.17	5%	180	3.50	5%	246	0.90	-
s.	240	0.50	-	198	2.30	-	230	0.17	-
e.	181	3.43	5%	267	2.30	-	230	0.17	-
hy.	250	1.17	-	227	0.37	-	233	0.03	-
k.	271	2.57	-	219	0.90	-	236	0.23	-
p.	246	0.90	-	203	1.97	-	233	0.03	-
d.	226	0.43	-	234	0.10	-	240	0.50	-
m.	159	4.90	1%	308	5.03	1%	243	0.70	-

111. Rheumatic Heart Disease - Tuberculosis

h.	272	2.63	-	178	3.63	5%	253	1.37	-
s.	210	1.50	-	250	1.17	-	219	0.90	-
e.	184	3.23	-	258	1.70	-	224	0.57	-
hy.	292	3.97	5%	191	2.77	-	266	2.23	-
k.	292	3.97	5%	186	3.10	-	227	0.37	-
p.	268	2.37	-	198	2.30	-	251	1.23	-
d.	178	3.63	5%	295	4.17	1%	248	1.03	-
m.	165	4.50	1%	276	2.90	-	226	0.43	-

112. Thyrotoxicosis - Controls

	Likes			Dislikes			Total Choices		
h.	198	2.30	-	252	1.30	-	212	1.37	-
s.	259	1.77	-	246	0.90	-	263	2.03	-
e.	178	3.63	5%	255	1.50	-	209	1.57	-
hy.	288	3.70	5%	179	3.57	5%	225	0.50	-
k.	240	0.50	-	207	1.70	-	219	0.90	-
p.	292	3.97	5%	190	2.83	-	232	0.03	-
d.	183	3.30	5%	266	2.23	-	224	0.57	-
m.	202	2.03	-	250	1.17	-	215	1.17	-

113. Thyrotoxicosis - Arthritis

h.	259	1.77	-	245	0.83	-	259	1.77	-
s.	240	0.50	-	227	0.37	-	248	1.03	-
e.	146	5.77	1%	299	4.43	1%	217	1.03	-
hy.	277	2.97	-	203	1.97	-	221	0.77	-
k.	234	0.10	-	224	0.57	-	233	0.03	-
p.	257	1.63	-	211	1.43	-	234	0.10	-
d.	254	1.43	-	224	0.57	-	247	0.97	-
m.	212	1.37	-	221	0.77	-	207	1.70	-

114. Thyrotoxicosis - Rheumatic Heart Disease

h.	265	2.17	-	276	2.90	-	278	3.03	-
s.	280	3.17	5%	231	0.10	-	265	2.17	-
e.	180	3.50	5%	240	0.50	-	180	3.50	5%
hy.	250	1.17	-	197	2.37	-	200	2.17	-
k.	206	1.77	-	266	2.23	-	242	0.63	-
p.	215	1.47	-	244	0.27	-	218	0.97	-
d.	244	0.27	-	223	0.63	-	212	1.37	-
m.	218	0.97	-	207	1.70	-	193	2.63	-

115. Thyrotoxicosis - Tuberculosis

h.	279	3.10	-	228	0.30	-	271	2.57	-
s.	251	1.23	-	258	1.70	-	254	1.43	-
e.	170	4.17	1%	271	2.57	-	194	2.57	-
hy.	326	6.23	1%	160	4.83	1%	229	0.23	-
k.	269	2.43	-	201	2.10	-	232	0.03	-
p.	252	1.30	-	219	0.90	-	244	0.77	-
d.	183	3.30	5%	283	3.37	5%	243	0.70	-
m.	159	4.90	1%	268	2.37	-	201	2.10	-

116. Thyrotoxicosis - Peptic Ulcer

	Likes			Dislikes			Total Choices		
h.	286	3.57	5%	234	0.10	-	282	3.30	5%
s.	287	3.63	5%	205	1.83	-	256	1.57	-
e.	174	3.90	5%	268	2.37	-	217	1.03	-
hy.	235	0.17	-	197	2.37	-	191	2.77	-
k.	230	0.17	-	210	1.50	-	206	1.77	-
p.	224	0.57	-	253	1.37	-	226	0.43	-
d.	171	4.10	1%	235	0.17	-	197	2.37	-
m.	201	2.10	-	223	0.63	-	187	3.03	-

117. Tuberculosis - Controls

h.	158	4.97	1%	254	1.43	-	179	3.57	5%
s.	235	0.17	-	231	0.10	-	230	0.16	-
e.	268	2.37	-	229	0.24	-	250	1.17	-
hy.	179	3.57	5%	254	1.17	-	230	0.16	-
k.	186	3.10	-	224	0.58	-	223	0.63	-
p.	286	4.20	1%	193	2.63	-	235	0.17	-
d.	212	0.35	-	208	1.73	-	229	0.24	-
m.	276	2.90	-	224	0.58	-	273	2.70	-

118. Tuberculosis - Hypertension

h.	226	0.43	-	213	1.30	-	225	0.50	-
s.	254	1.43	-	201	2.10	-	222	0.70	-
e.	245	0.83	-	234	0.10	-	231	0.10	-
hy.	192	2.70	-	234	0.10	-	214	1.23	-
k.	149	2.23	-	276	2.10	-	234	0.10	-
p.	208	1.63	-	233	0.03	-	221	0.77	-
d.	271	2.57	-	176	3.77	5%	239	0.43	-
m.	236	0.23	-	224	0.57	-	237	0.30	-

119. Tuberculosis - Peptic Ulcer

h.	217	1.03	-	251	1.23	-	240	0.50	-
s.	258	1.70	-	203	1.97	-	251	1.23	-
e.	270	2.50	-	227	0.37	-	252	1.30	-
hy.	177	3.70	5%	256	1.57	-	211	1.43	-
k.	208	1.63	-	237	0.30	-	209	1.57	-
p.	196	2.43	-	252	1.30	-	224	0.57	-
d.	214	1.23	-	213	1.30	-	214	1.23	-
m.	258	1.70	-	202	2.03	-	238	0.37	-

120. Tuberculosis - Anxiety

	Likes			Dislikes			Total Choices		
h.	193	2.63	-	258	1.70	-	203	1.97	-
s.	155	5.17	1%	270	2.50	-	229	0.23	-
e.	256	1.57	-	235	0.17	-	235	0.17	-
hy.	199	2.23	-	249	1.10	-	204	1.90	-
k.	233	0.03	-	254	1.43	-	250	1.17	-
p.	235	0.17	-	222	0.70	-	204	1.90	-
d.	317	5.63	1%	176	3.77	5%	264	2.10	-
m.	315	5.50	1%	190	2.83	-	269	2.43	-

121. Tuberculosis - Depression

h.	231	0.10	-	218	0.97	-	231	0.10	-
s.	224	0.57	-	193	2.63	-	224	0.57	-
e.	253	1.37	-	231	0.10	-	235	0.17	-
hy.	201	2.10	-	238	0.37	-	218	0.97	-
k.	244	0.77	-	230	0.17	-	237	0.30	-
p.	180	3.50	5%	273	2.70	-	220	0.83	-
d.	294	4.10	1%	165	4.50	1%	261	1.90	-
m.	233	0.03	-	277	2.97	-	266	2.23	-

122. Peptic Ulcer - Controls

h.	155	5.47	1%	241	0.56	-	158	4.97	1%
s.	201	2.10	-	273	2.70	-	246	0.90	-
e.	246	0.90	-	272	2.63	-	220	0.83	-
hy.	271	2.56	-	252	1.30	-	206	1.77	-
k.	233	0.03	-	217	1.04	-	226	0.44	-
p.	285	3.50	-	225	0.50	-	240	0.50	-
d.	250	1.17	-	253	1.37	-	248	1.03	-
m.	253	1.37	-	236	0.23	-	238	0.37	-

123. Peptic Ulcer - Rheumatic Heart Disease

h.	167	4.37	1%	250	1.17	-	196	2.43	-
s.	224	0.57	-	266	2.23	-	246	0.90	-
e.	272	2.63	-	204	1.90	-	215	1.17	-
hy.	239	0.43	-	235	0.17	-	235	0.17	-
k.	205	1.83	-	275	2.83	-	259	1.77	-
p.	232	0.03	-	226	0.43	-	224	0.57	-
d.	283	3.37	5%	192	2.70	-	248	1.03	-
m.	251	1.23	-	206	1.77	-	231	0.10	-

124. Anxiety - Controls

	Likes			Dislikes			Total Choices		
h.	268	2.37	-	210	1.50	-	253	1.37	-
s.	158	4.97	1%	295	4.17	1%	220	1.37	-
e.	195	2.50	-	229	0.23	-	214	1.23	-
hy.	214	1.23	-	248	1.03	-	218	0.97	-
k.	266	2.23	-	249	1.10	-	260	1.83	-
p.	264	2.10	-	216	1.10	-	212	1.37	-
d.	314	5.43	1%	194	2.57	-	252	1.30	-
m.	263	2.03	-	191	2.77	-	233	0.03	-

125. Anxiety - Arthritis

h.	249	1.10	-	246	0.90	-	243	0.70	-
s.	289	3.77	5%	143	6.00	1%	213	1.30	-
e.	217	1.03	-	248	1.03	-	236	0.23	-
hy.	212	1.37	-	264	2.10	-	248	1.03	-
k.	201	2.10	-	242	0.63	-	215	1.17	-
p.	231	0.10	-	237	0.30	-	236	0.23	-
d.	195	2.50	-	243	0.70	-	213	1.30	-
m.	218	0.97	-	238	0.37	-	221	0.77	-

126. Anxiety - Diabetes

h.	254	1.43	-	202	2.03	-	257	1.63	-
s.	261	1.90	-	134	6.57	1%	168	4.30	1%
e.	292	3.97	5%	239	0.43	-	267	2.30	-
hy.	270	2.50	-	248	1.03	-	278	3.03	-
k.	210	1.50	-	221	0.77	-	225	0.50	-
p.	190	2.83	-	262	1.97	-	201	2.10	-
d.	211	1.43	-	230	0.17	-	217	1.03	-
m.	156	5.10	1%	319	5.77	1%	216	1.10	-

127. Anxiety - Rheumatic Heart Disease

h.	242	0.63	-	276	2.90	-	272	2.63	-
s.	289	3.77	5%	175	3.83	5%	233	0.03	-
e.	276	2.90	-	225	0.50	-	252	1.30	-
hy.	229	0.23	-	219	0.90	-	222	0.70	-
k.	204	1.90	-	255	1.50	-	238	0.37	-
p.	212	1.37	-	262	1.97	-	228	0.30	-
d.	205	1.83	-	239	0.43	-	213	1.30	-
m.	212	1.37	-	246	0.90	-	219	0.90	-

128. Anxiety - Thyrotoxicosis

	Likes			Dislikes			Total Choices		
h.	247	0.97	-	232	0.03	-	245	0.83	-
s.	157	4.03	1%	315	6.00	1%	257	1.63	-
e.	140	6.17	1%	277	2.97	-	198	2.30	-
hy.	264	2.10	-	179	3.57	5%	208	1.63	-
k.	252	1.30	-	218	0.97	-	249	1.10	-
p.	245	0.83	-	188	2.97	-	209	1.23	-
d.	279	3.10	-	229	0.23	-	266	2.23	-
m.	233	0.03	-	204	1.90	-	205	1.17	-

129. Anxiety - Peptic Ulcer

h.	270	2.50	-	246	0.90	-	278	3.03	-
s.	334	6.77	1%	142	6.03	1%	244	0.77	-
e.	285	3.50	5%	215	1.17	-	245	0.83	-
hy.	208	1.63	-	255	1.50	-	237	0.30	-
k.	203	1.97	-	235	0.17	-	202	2.03	-
p.	194	2.57	-	285	3.50	5%	249	1.10	-
d.	151	5.43	1%	252	1.30	-	182	3.37	5%
m.	210	1.50	-	244	0.77	-	218	0.97	-

130. Depression - Controls

h.	163	4.63	1%	268	2.37	-	196	2.43	-
s.	226	0.43	-	294	4.10	1%	278	3.03	-
e.	247	0.97	-	205	1.83	-	208	1.63	-
hy.	245	0.83	-	246	0.90	-	259	1.77	-
k.	200	2.17	-	228	0.30	-	217	1.03	-
p.	311	5.23	1%	157	5.03	1%	248	1.03	-
d.	157	5.03	1%	283	3.37	5%	233	0.03	-
m.	283	3.37	5%	164	4.57	1%	244	0.77	-

131. Depression - Arthritis

h.	205	1.83	-	268	2.37	-	218	0.97	-
s.	221	0.77	-	278	3.03	-	246	0.90	-
e.	222	0.70	-	254	1.43	-	249	1.10	-
hy.	219	0.90	-	270	2.50	-	246	0.90	-
k.	192	2.70	-	267	2.30	-	223	0.63	-
p.	293	4.03	5%	180	3.50	5%	221	0.77	-
d.	232	0.03	-	261	1.90	-	259	1.77	-
m.	308	5.03	1%	163	4.63	1%	204	1.90	-

132. Depression - Diabetes

	Likes			Dislikes			Total Choices		
h.	216	1.10	-	212	1.37	-	236	0.23	-
s.	193	2.63	-	239	0.43	-	212	1.37	-
e.	283	3.37	5%	233	0.03	-	289	3.77	5%
hy.	266	2.23	-	254	1.43	-	268	2.37	-
k.	195	2.50	-	241	0.57	-	225	0.50	-
p.	260	1.83	-	189	2.90	-	210	1.50	-
d.	227	0.37	-	253	1.37	-	262	1.97	-
m.	264	2.10	-	195	2.50	-	226	0.43	-

133. Depression - Rheumatic Heart Disease

h.	197	2.37	-	283	3.37	5%	230	0.17	-
s.	238	0.37	-	278	3.03	-	268	2.37	-
e.	274	2.77	-	188	2.97	-	242	0.63	-
hy.	211	1.43	-	268	2.37	-	225	0.50	-
k.	170	4.17	1%	276	2.90	-	211	1.43	-
p.	268	2.37	-	211	1.43	-	218	0.97	-
d.	211	1.43	-	230	0.17	-	230	0.17	-
m.	304	4.77	1%	134	6.57	1%	209	1.57	-

134. Depression - Thyrotoxicosis

h.	175	3.83	5%	257	1.63	-	194	2.57	-
s.	208	1.63	-	272	2.63	-	239	0.43	-
e.	301	4.57	1%	197	2.37	-	290	3.83	5%
hy.	188	2.97	-	286	3.57	5%	247	0.97	-
k.	195	2.50	-	262	1.97	-	224	0.57	-
p.	277	2.97	-	207	1.70	-	236	0.23	-
d.	205	1.83	-	259	1.77	-	241	0.57	-
m.	314	5.43	1%	152	5.37	1%	240	0.50	-

135. Depression - Peptic Ulcer

h.	216	1.10	-	278	3.03	-	249	1.10	-
s.	252	1.30	-	254	1.43	-	256	1.57	-
e.	260	1.83	-	227	0.37	-	251	1.23	-
hy.	209	1.57	-	256	1.57	-	227	0.37	-
k.	199	2.23	-	248	1.03	-	216	1.10	-
p.	213	1.30	-	207	1.70	-	228	0.30	-
d.	167	4.37	1%	268	2.37	-	221	0.77	-
m.	264	2.10	-	171	4.10	-	209	1.57	-

136. Depression - Anxiety

	Likes			Dislikes			Total Choices		
h.	198	2.30	-	280	3.17	5%	206	1.77	-
s.	155	5.17	1%	332	6.63	1%	251	1.23	-
e.	216	1.10	-	241	0.57	-	233	0.03	-
hy.	244	0.77	-	246	0.90	-	230	0.17	-
k.	230	0.17	-	267	2.30	-	237	0.30	-
p.	289	3.77	5%	162	4.70	1%	191	2.77	-
d.	260	1.83	-	250	1.17	-	268	2.37	-
m.	324	6.10	1%	145	5.83	1%	240	0.50	-

APPENDIX 2

page

The First Choices 434

Totals in each group 441

Significant differences in the number of choices, compared with the Controls 444

The Four First Choices.

	Likes				Dislikes			
Controls								
1.	2d	7hy	3e	6s	6k	4p	5p	4d
2.	3k	7e	6s	8p	4d	6d	1h	4s
3.	7m	8e	7h	8m	3d	1k	1h	1hy
4.	1p	4m	4h	7d	7e	6p	5h	3hy
5.	7h	4p	8hy	6s	4s	7hy	1hy	3e
6.	7h	2h	8e	5d	7hy	1k	3d	4s
7.	7h	3hy	1p	6hy	1hy	6d	2m	8hy
8.	3s	7h	2d	6s	3hy	1hy	8e	5s
9.	7h	4p	4h	6e	2s	1k	8p	7hy
10.	5h	6s	8h	6k	3d	5k	7hy	1hy
11.	8p	1p	6hy	6s	1e	7s	4d	5m
12.	7h	4h	5h	8h	1m	5k	3hy	7e
13.	7s	6s	1e	7h	1m	1hy	8hy	5k
14.	1e	7h	5h	7s	1hy	1k	4p	6p
15.	7m	1p	5s	4h	7hy	3p	2s	3k
Alcoholism								
1.	7h	2s	6s	2h	3e	7hy	5k	3k
2.	7h	8h	5s	4h	1hy	1h	5p	1k
3.	4p	7m	2hy	8m	8k	8h	6k	7hy
4.	7h	4m	3d	6e	4d	1k	6hy	5k
5.	7h	5d	8p	6s	1k	1hy	6hy	4d
6.	7h	8k	2h	6s	5k	5m	5h	7hy
7.	4m	7s	7h	6s	5k	1k	2d	8k
Arthritis								
1.	7s	7h	7m	1d	1hy	6p	2e	5p
2.	7m	3hy	1p	8p	7hy	3k	1e	3e
3.	7h	2s	4p	3k	1k	7hy	5k	3e
4.	3m	7h	3s	8h	1k	7e	5k	8hy
5.	4d	6e	4h	5d	8hy	2s	1hy	7s
6.	8m	4d	7s	7h	7hy	5m	4m	1k
7.	4d	8h	7h	6hy	1hy	7hy	5k	5p
8.	8m	3k	8p	6s	7hy	1hy	7d	1e
9.	5s	7h	8h	2h	3k	8p	8hy	3e

	Likes				Dislikes			
10.	7h	5d	2h	6s	5k	1k	1hy	5p
11.	5h	7h	1e	7d	1k	5k	2s	8e
12.	1p	6s	7h	4p	7hy	2s	1hy	8e
13.	7h	4h	7m	6s	5k	6k	8hy	5d
14.	7h	4h	3d	6s	3e	8p	6hy	2hy
15.	7h	8h	4h	4m	1k	1hy	5k	6k

Asthma

1.	5h	8h	4m	6s	1k	5p	3p	7s
2.	4m	7h	2h	1h	4p	1hy	5p	4s
3.	7h	7s	2h	7m	5k	1k	5p	8m
4.	7h	8e	7s	6e	8hy	5k	4s	7hy
5.	4p	7h	6s	4k	5p	4s	1k	1hy
6.	8h	7h	5h	6hy	8m	7e	5k	5s
7.	6s	1h	3s	2m	8h	8m	2d	1p

Chronic Chest

1.	4h	5s	7h	5h	5k	1k	3p	8p
2.	7h	2h	2s	8e	5p	7hy	2d	3d
3.	1p	7m	8m	7h	6hy	4h	6k	3e
4.	6s	4s	2h	7h	2s	1k	3e	8k
5.	1e	3s	5h	7h	4k	3hy	7hy	1k
6.	7h	4h	7s	4s	1p	4k	2e	7hy
7.	3k	5s	7s	1k	5m	3p	2d	1hy
8.	7h	1e	6e	5h	7s	3d	3k	4k
9.	6hy	8p	1k	8e	1hy	5p	3k	6e
10.	1p	7h	4p	6s	7hy	5k	2m	1hy
11.	6s	8e	7h	4m	3e	5k	1k	1hy
12.	6s	2h	8p	7m	1hy	5k	1k	3p
13.	7h	4m	5d	2h	7hy	5p	6hy	4p
14.	6hy	8p	1k	8e	1hy	5p	3k	6e
15.	4m	6e	7m	7h	4s	1hy	7hy	1k

Diabetes

1.	6e	7h	4d	4h	1m	5k	4k	3e
2.	8h	1e	7h	7m	8m	2e	3e	5p
3.	7h	6k	5h	4h	8hy	7e	8m	1m
4.	7h	6hy	8h	4h	1hy	8p	7s	8m

	Likes				Dislikes			
5.	7h	4h	5h	6hy	1m	4d	5s	1hy
6.	7h	8m	4m	3k	7hy	6k	5p	3e
7.	8hy	1k	3e	6p	5h	2s	5d	4h
8.	1p	3hy	5h	7h	1m	8hy	2e	1k
9.	7h	2d	2h	5d	5p	1k	5k	8p
10.	3p	7h	7e	7d	1k	5k	8hy	8k
11.	7h	1e	4s	3s	1hy	2m	2e	8h
12.	7h	4h	2s	7s	1hy	8p	4d	5m
13.	7m	5h	1p	1m	5p	1k	5k	1hy
14.	4h	7s	1e	8h	7hy	8p	5p	8hy
15.	6e	2h	8h	7h	5k	8e	1m	2m

Dyspepsia

1.	5s	7h	2h	5h	4m	3d	3p	5p
2.	3k	7m	4m	6s	4d	7hy	1e	1k
3.	7h	4h	4d	6e	5p	2s	3hy	5k
4.	7h	8e	1p	3k	3hy	6k	1k	7hy
5.	7h	2h	6s	3k	7d	8e	7e	6e
6.	6s	8e	7h	4m	3e	5k	1k	1hy
7.	3s	7h	2d	6s	3hy	1hy	8e	5s

Hypertension

1.	7h	2hy	4h	2h	1e	3d	8hy	1k
2.	3s	5h	6s	1p	4m	7d	3k	4k
3.	8m	2h	6s	7h	8e	7d	1k	3e
4.	4h	1p	7h	2h	7hy	3p	5k	1k
5.	7h	4h	7s	2e	6d	1e	6hy	8p
6.	7s	5h	1e	6d	8e	5k	7hy	4p
7.	7h	2hy	6s	5h	3k	4m	4p	7hy
8.	1e	6s	4s	1p	7hy	5h	2e	5p
9.	6s	5h	6k	4h	1k	5k	1hy	8k
10.	7h	2d	4d	5h	5k	8hy	1hy	1k
11.	1p	2h	5h	7d	1k	7hy	4s	4p
12.	4d	2h	8e	1h	6hy	3d	8p	1k
13.	5h	7e	6s	7h	1k	6p	3e	5p
14.	1p	7h	4h	5s	4p	5p	7s	5k
15.	5d	6e	7m	5s	8hy	2hy	4d	1hy

Muscle Tension

1.	1p	5h	7h	6s	5k	3e	8hy	3hy
2.	7h	6s	5h	8h	1k	4p	1e	3p

	Likes				Dislikes			
3.	5h	1hy	2d	5d	4k	8k	3p	4m
4.	7s	1e	7h	6hy	4s	1hy	7hy	1k
5.	4d	8h	7h	6hy	1hy	7hy	5k	5p
6.	7h	5h	1p	1e	2s	5p	2m	8p
7.	7h	8e	6s	2h	5k	1k	2e	4k

Obesity

1.	6s	1p	7h	4h	2d	7e	7hy	2m
2.	7h	6s	5h	8p	3s	7hy	4p	5p
3.	7h	6s	5s	5d	3d	4m	8m	3k
4.	5h	7h	6s	8e	1k	6hy	3d	3hy
5.	7h	5d	2h	6e	3k	3d	1e	3p
6.	7h	4h	4d	8h	4p	1k	5m	1hy
7.	6s	7h	5h	8e	2s	5m	1k	4h

Pernicious Anaemia

1.	7m	7d	2hy	3e	1k	7e	1p	1m
2.	5h	7m	4h	5d	8hy	3p	2m	7s
3.	1m	4m	8h	7h	7hy	1hy	5k	4s
4.	7h	1h	5h	2h	7d	8m	1k	6s
5.	7m	7d	6hy	8h	1k	8hy	5k	4s
6.	7h	3s	4h	3d	1hy	8hy	6hy	8p
7.	7h	7e	5h	4h	1k	3k	8k	5m
8.	5h	8h	4h	6hy	6k	6d	1p	7e
9.	5h	8h	4h	5s	6k	6d	1p	3k
10.	7h	1p	7d	1e	1hy	5k	4d	1k
11.	7h	4h	8h	4m	1k	7hy	8e	1hy
12.	7h	5h	1p	4h	8m	8e	8hy	2m
13.	5h	7m	4h	1h	3p	1k	8k	3e
14.	8k	8e	4d	6s	1hy	7d	5m	5h
15.	6s	7m	6d	7h	8m	6p	4p	4s

Rheumatic Heart Disease

1.	3s	8h	7h	1h	4s	6p	8p	8m
2.	4h	7h	2h	2s	7hy	3p	5k	1k
3.	3p	4h	7d	4m	6k	5p	4s	4p
4.	8p	7s	2s	7d	4k	6e	3k	1p
5.	7h	4h	8h	5h	5k	1k	2s	2m
6.	7m	3e	7h	8e	2s	5s	4s	5p
7.	7h	2h	7s	1p	1hy	5k	1k	7hy

	Likes				Dislikes			
8.	5h	7h	1p	3s	7hy	1k	4h	1e
9.	1h	6e	7h	8h	3k	5p	3s	4p
10.	5h	6e	1e	7h	1k	4h	2s	1hy
11.	6s	8m	7h	4m	4k	6k	2hy	3k
12.	8p	2h	7m	7h	7d	5k	7hy	5p
13.	7h	7m	7s	4m	7hy	1k	6p	2d
14.	7m	2h	4m	8h	7hy	5h	1k	7e
15.	7h	8h	8p	6s	1hy	3d	7hy	3hy

Thyrotoxicosis

1.	1p	7e	7h	2h	8m	4p	7s	3k
2.	7h	6e	4h	8h	7hy	8m	3hy	8p
3.	2h	6s	6k	5h	7s	6hy	2s	3hy
4.	7h	4m	4k	6e	5k	1hy	5p	1k
5.	3d	1e	3k	4m	1hy	7hy	4s	5p
6.	5h	5d	8p	7h	2s	3s	1k	3k
7.	7h	7s	1p	2h	5k	6hy	3p	1k
8.	7e	7h	6hy	6s	4p	8m	7hy	5k
9.	5d	7h	4m	7m	7hy	5k	1k	5p
10.	4d	7h	8h	1e	8hy	5k	8p	1hy
11.	7m	6e	5d	4h	1k	6hy	2s	1hy
12.	1e	4s	8h	7d	7hy	3e	8p	1hy
13.	1p	4m	4h	7d	7e	6p	5h	3hy
14.	8e	7h	2h	6s	1hy	3s	3d	7hy
15.	1k	2d	7hy	1e	2h	7h	7s	8e

Tuberculosis

1.	7h	4h	3s	2hy	5p	3d	1k	7hy
2.	7h	6hy	3s	6e	2e	4d	1e	6p
3.	7h	5h	6hy	3d	4p	7e	8m	2s
4.	7h	4h	8h	2h	6s	4m	6p	3d
5.	7m	6s	8e	7h	7d	7hy	3d	1hy
6.	7s	2d	8hy	1p	4h	3e	3d	5m
7.	3k	2d	6s	6hy	4s	1k	7hy	3e
8.	7h	2s	8m	7m	2d	5m	4s	6hy
9.	7h	8k	4h	2h	8p	1k	7hy	6hy
10.	7h	4m	1p	7s	6k	1k	8p	4d
11.	7h	4h	6hy	8hy	5p	2s	5k	7hy
12.	1p	2d	5h	7h	6k	5m	2hy	1k
13.	6e	8h	1e	7s	3p	3k	5s	4d
14.	3k	2d	5d	6s	4p	7e	8m	4h
15.	1e	7h	5h	8h	1k	3p	6hy	3k

Peptic Ulcer

	Likes				Dislikes			
1.	7h	6s	2h	5h	2s	7hy	4k	3p
2.	3s	6s	7h	1e	6hy	3hy	8p	8e
3.	6s	7h	1e	2h	7hy	5k	1k	1hy
4.	1e	2h	8h	7d	4p	4m	6k	5h
5.	7h	2h	6e	4k	7hy	5k	6k	7d
6.	7h	5s	6hy	2h	3p	8hy	8m	2m
7.	7m	8k	1p	5s	1m	4m	4h	8hy
8.	8m	5h	8h	7h	1p	2e	1k	1m
9.	7s	8e	7m	7h	7hy	6e	5p	4s
10.	7h	5s	2hy	2h	3k	1k	5k	8h
11.	8m	6s	7h	3k	1hy	7hy	5h	3d
12.	4m	7s	4k	7h	5k	1k	2d	8k
13.	7h	6s	4h	2h	3d	7hy	2d	1k
14.	2h	3k	3s	4m	2d	7hy	4d	1hy
15.	7h	4h	4s	8h	3k	1m	8p	8hy

Anxiety

1.	6p	8p	7d	1p	4d	3p	8m	6s
2.	7h	5h	1p	4h	3k	1k	1m	3e
3.	4m	7h	5h	4h	8hy	7hy	1hy	8k
4.	3e	6k	8p	2hy	5h	4m	1k	1hy
5.	4h	7h	3d	4m	7hy	1k	5k	2s
6.	6hy	1k	3e	3d	6s	5h	4k	5d
7.	7h	2h	6s	3k	7d	8e	7e	6e
8.	7h	8h	2h	7m	4s	5k	5p	7hy
9.	7h	5d	2h	6k	1k	7hy	3p	4p
10.	7h	4d	2h	4h	1k	5k	5p	6s
11.	7h	8hy	4h	4p	2s	1k	4s	7hy
12.	7h	8k	4m	5d	1hy	7hy	4s	3p
13.	6k	7h	6hy	6s	3k	5m	6d	3s
14.	6d	5h	8k	2d	4s	5k	7hy	3e
15.	7h	4p	8hy	6s	4s	2s	7hy	1hy

Depression

1.	8h	7h	5d	2e	8hy	4p	8k	5k
2.	6s	6hy	1h	3s	1m	3hy	7e	4m
3.	5h	7h	3hy	6s	3p	1k	5k	4p
4.	4d	7h	8h	1e	8hy	5k	8p	1hy
5.	7h	4h	5h	5s	1hy	4p	5m	3k
6.	6s	2h	7h	6d	3d	8e	3p	5k
7.	2h	2s	3hy	6k	1m	7e	8m	4m
8.	7h	5h	8h	5d	1k	4p	1e	3p
9.	7h	5s	6hy	2h	3p	8hy	8m	2m

Likes			
10. 4k	7h	2h	6s
11. 1e	3hy	7s	2hy
12. 7h	4p	4h	6e
13. 7h	1e	7hy	3k
14. 7h	6s	6k	2h
15. 7h	5h	7s	2m

Dislikes			
7hy	3p	2s	4m
4m	4p	6k	5h
2s	1k	8p	7hy
5k	8e	3e	2hy
8e	5p	5m	8m
1hy	1k	4p	6p

First Choice

	Likes							Dislikes							Total						
	h	s	e	hyk	p	d	m	h	s	e	hyk	p	d	m	h	s	e	hyk	p	d	m
Controls	6	2	1	0	1	2	1	2	0	2	2	5	1	0	3	2	6	4	3	5	2	2	4	4
Alcoholism	5	0	0	0	0	1	0	1	0	0	1	1	4	0	1	0	5	0	1	1	4	1	1	0
Arthritis	6	2	0	0	0	1	2	4	0	0	1	7	7	0	0	0	6	2	1	7	7	1	2	4
Asthma	4	1	0	0	0	1	0	1	1	0	0	1	2	2	0	1	5	1	0	1	2	3	0	2
Chest	5	3	1	2	1	2	0	1	0	3	1	6	2	2	0	1	5	6	2	8	3	4	0	2
Diabetes	9	0	2	1	0	2	0	1	1	0	0	6	2	2	0	4	10	0	2	7	2	2	0	5
Dyspepsia	3	3	0	0	1	0	0	0	0	0	1	2	0	1	2	1	3	3	1	2	1	1	2	1
Hypertens.	6	3	1	0	0	2	2	1	0	0	3	4	5	1	1	1	6	3	3	4	5	3	3	2
Muscle	4	1	0	0	0	1	1	0	0	2	0	1	4	0	0	0	4	3	0	1	4	1	1	0
Obesity	5	2	0	0	0	0	0	0	0	2	0	0	2	1	2	0	5	4	0	0	2	1	2	0
P. Anaemia	10	1	0	0	1	0	0	3	0	0	0	5	6	1	1	2	10	1	0	5	7	1	1	5
R.H.D.	8	2	0	0	0	3	0	2	0	2	0	6	6	0	1	0	8	4	0	6	6	3	1	2
Thyro.	5	0	3	0	1	2	3	1	1	2	1	6	3	1	0	1	6	2	4	6	4	3	3	2
T.B.	8	1	2	0	2	1	0	1	1	2	1	0	3	6	2	0	9	3	3	0	5	7	2	1
P. Ulcer	7	3	1	0	0	0	0	4	0	1	0	5	3	3	2	1	7	4	1	5	3	3	2	5
Anxiety	9	0	1	1	1	1	1	1	1	5	0	3	4	0	2	0	10	5	1	4	5	1	3	1
Depression	10	2	1	0	1	0	1	0	0	1	1	5	2	2	1	3	10	3	2	5	3	2	2	3

Second Choice

Controls	4	2	2	2	0	4	0	1	0	2	2	5	1	0	2	2	4	4	4	7	1	4	2	3
Alcoholism	1	2	0	0	1	0	1	2	2	0	0	2	2	0	0	1	3	2	0	2	3	0	0	3
Arthritis	8	2	1	1	1	0	2	0	0	2	1	4	4	3	0	1	8	4	2	5	5	3	2	1
Asthma	5	1	1	0	0	0	0	0	0	1	1	1	2	1	0	1	5	2	2	1	2	1	0	1
Chest	4	4	3	0	0	2	0	2	1	0	0	3	6	4	1	0	5	4	3	3	6	6	1	2

	h	s	e	hyk	p	d	m	h	s	e	hyk	p	d	m	h	s	e	hyk	p	d	m
Diabetes	6	1	2	2	2	0	1	1	0	1	3	1	5	3	1	1	6	2	5	3	7	3	2	2
Dyspepsia	4	0	2	0	0	0	0	1	0	1	1	2	2	0	1	0	4	1	1	2	2	0	1	1
Hypertens.	8	1	2	2	0	1	1	0	1	0	1	3	2	2	4	1	9	1	3	5	2	3	5	1
Muscle	3	1	2	1	0	0	0	0	0	0	1	2	2	2	0	0	3	1	3	3	2	2	0	0
Obesity	3	2	0	0	0	1	1	0	0	0	1	2	1	0	1	2	3	2	1	2	1	1	2	2
P. Anaemia	5	1	2	0	0	1	2	4	0	0	2	4	3	2	3	1	5	1	4	4	3	3	5	5
R.H.D.	9	1	3	0	0	0	0	2	2	1	1	0	6	4	1	0	11	2	1	0	6	4	1	2
Thyro.	4	3	4	0	0	0	2	2	0	3	1	5	2	2	0	2	4	6	5	5	2	2	2	4
T.B.	6	1	1	1	1	0	4	1	0	1	3	1	4	1	2	3	6	2	4	2	5	1	6	4
P. Ulcer	5	7	1	0	2	0	0	0	0	0	2	6	4	0	0	3	5	7	3	6	6	0	0	3
Anxiety	7	0	0	1	3	2	2	0	1	1	1	3	6	1	0	2	8	1	1	4	9	3	2	2
Depression	8	3	1	2	0	1	0	0	0	0	3	2	4	6	0	0	8	3	4	4	4	7	0	0
Third Choice																								
Controls	6	2	3	2	0	1	1	0	3	1	1	4	0	3	2	1	9	3	4	6	0	4	3	1
Alcoholism	2	2	0	0	0	1	1	0	1	0	0	2	2	1	1	0	3	2	0	2	2	2	2	0
Arthritis	6	2	1	0	0	3	1	2	0	1	2	6	4	0	1	1	6	3	3	6	4	3	2	3
Asthma	3	3	0	0	0	0	0	1	0	1	0	0	2	3	1	0	3	4	0	0	2	3	1	1
Chest	4	3	1	0	2	2	1	2	0	0	2	3	6	1	2	1	4	3	3	3	8	3	3	3
Diabetes	7	2	3	0	0	1	1	1	0	2	3	1	3	2	2	2	7	4	6	1	3	3	3	3
Dyspepsia	2	1	0	0	0	1	2	1	0	0	3	1	2	1	0	0	2	1	3	1	2	2	2	1
Hypertens.	4	6	2	0	1	0	1	1	0	2	2	5	3	2	1	0	4	8	4	5	4	2	2	1
Muscle	4	1	0	0	0	1	1	0	0	0	2	2	1	1	0	1	4	1	2	2	1	2	1	1
Obesity	4	2	0	0	0	0	1	0	0	0	1	1	1	1	1	2	4	2	1	1	1	1	2	2

	h	s	e	hyk	p	d	m	h	s	e	hyk	p	d	m	h	s	e	hyk	p	d	m
P. Anaemia	9	0	0	2	0	1	3	0	0	0	1	2	5	4	1	2	9	0	1	4	5	5	4	2
R.H.D.	6	3	1	0	0	2	1	2	1	5	0	3	4	2	0	0	7	8	1	3	4	4	1	2
Thyro.	6	0	0	2	3	2	1	1	1	5	0	2	2	4	1	0	7	5	0	4	5	6	2	0
T.B.	4	3	2	3	0	1	1	1	0	2	1	4	2	2	2	2	4	5	3	7	2	3	3	3
P. Ulcer	6	2	2	2	1	1	0	1	2	0	0	0	6	3	3	1	8	2	2	2	7	4	3	2
Anxiety	5	1	1	2	1	2	2	1	0	2	1	3	3	3	1	2	5	3	2	5	4	5	3	3
Depression	7	2	0	4	1	0	1	0	0	1	3	0	3	4	0	4	7	3	3	4	4	4	1	4
Fourth Choice																								
Controls	3	5	1	1	1	1	2	1	0	3	2	5	2	1	1	1	3	8	3	6	3	2	3	2
Alcoholism	2	3	1	0	0	0	0	1	0	0	0	2	3	0	1	0	2	3	1	2	3	0	1	1
Arthritis	3	4	0	1	1	2	3	1	0	1	6	2	2	3	1	0	3	5	6	3	3	5	4	1
Asthma	1	1	1	1	1	0	0	2	0	3	0	2	0	1	0	1	1	4	1	3	1	1	0	3
Chest	7	2	3	0	1	0	0	2	0	0	3	4	4	3	1	0	7	2	6	4	5	3	1	2
Diabetes	6	2	0	1	1	1	2	2	2	0	2	3	2	2	0	4	8	2	2	4	3	3	2	6
Dyspepsia	1	2	1	0	2	0	0	1	0	1	1	2	2	1	0	0	1	3	2	2	4	1	0	1
Hypertens.	8	2	1	0	0	2	2	0	0	0	1	2	7	5	0	0	8	2	2	2	7	7	2	0
Muscle	2	1	1	2	0	0	1	0	0	0	0	1	2	3	0	1	2	1	1	3	2	3	1	1
Obesity	2	0	3	0	0	1	1	0	1	0	0	2	1	2	0	1	3	0	3	2	1	3	1	1
P. Anaemia	7	2	2	1	0	0	2	1	1	5	2	1	2	1	0	3	8	7	4	2	2	1	2	4
R.H.D.	6	3	1	0	0	1	1	3	0	0	2	3	2	5	1	2	6	3	3	3	2	6	2	5
Thyro.	6	2	3	0	0	0	2	2	0	0	1	6	5	3	0	0	6	2	4	6	5	3	2	2
T.B.	5	3	1	3	0	1	1	1	1	1	1	5	2	1	3	1	6	4	2	8	2	2	4	2

	h	s	e	hyk	p	d	m	h	s	e	hyk	p	d	m	h	s	e	hyk	p	d	m
P. Ulcer	9	1	1	0	2	0	1	1	2	1	1	4	2	1	2	2	11	2	2	4	4	1	3	3
Anxiety	3	2	0	1	2	2	3	2	0	4	3	4	1	2	1	0	3	6	3	5	3	4	4	2
Depression	2	4	3	1	2	0	2	1	1	0	0	3	3	3	0	5	3	4	3	4	5	3	2	6

Significant Differences in the Number of Choices Compared with Controls

		Likes	Dislikes	Total
Alcoholism	1st choice	-	-	-
	2nd	-	-	-
	3rd	-	-	h, fewer, 5% level
	4th	-	-	-
Arthritis	1st choice	-	k, more, 5%	k, more, 5%
	2nd	-	-	-
	3rd	-	-	-
	4th	-	-	-
Asthma	1st choice	-	-	-
	2nd	-	-	hy, fewer, 5%
	3rd	-	-	h, more, 5% hy, fewer, 1%
	4th	-	-	-
Chest	1st choice	-	-	-
	2nd	-	k, more, 5%	k, more, 5%
	3rd	-	k, more, 1%	k, more, 1%
	4th	-	-	s, fewer, 5%
Diabetes	1st choice	-	-	-
	2nd	-	-	k, more, 5%
	3rd	-	-	hy, more, 5%
	4th	-	-	s, fewer, 5%

		Likes	Dislikes	Total
Dyspepsia	1st choice	-	-	-
	2nd	-	-	-
	3rd	-	-	h, fewer, 1% hy, fewer, 5%
	4th	-	-	-
Hypertens.	1st choice	-	-	-
	2nd	-	-	-
	3rd	-	-	-
	4th	-	k, more, 5%	s, fewer, 5% p, more, 5%
Muscle	1st choice	-	-	-
	2nd	-	-	-
	3rd	-	-	-
	4th	-	-	s, fewer, 5%
Obesity	1st choice	-	-	hy, fewer, 1%
	2nd	-	-	-
	3rd	-	-	hy, fewer, 5%
	4th	-	-	s, fewer, 1%
P. Anaemia	1st choice	-	k, more, 5%	k, more, 5%
	2nd	-	-	-
	3rd	-	k, more, 1%	k, more, 1%
	4th	-	-	-
R.H.D.	1st choice	-	k, more, 5%	-
	2nd	-	hy, fewer, 1% k, more, 5%	h, more, 1% hy, fewer, 1%
	3rd	-	-	-
	4th	-	-	-
Thyro.	1st choice	-	-	-
	2nd	-	-	-
	3rd	-	-	k, more, 1%
	4th	-	-	s, fewer, 5%

		Likes	Dislikes	Total
T.B.	1st choice	-	hy, fewer, 1% p, more, 1%	hy, fewer, 1% p, more, 5%
	2nd	-	-	hy, fewer, 5%
	3rd	-	-	-
	4th	-	-	-
P. Ulcer	1st choice	-	-	-
	2nd	s, more, 5%	-	-
	3rd	-	k, more, 1%	k, more, 1%
	4th	h, more, 5%	-	h, more, 1% s, fewer, 5%
Anxiety	1st choice	-	-	-
	2nd	-	k, more, 5%	k, more, 1%
	3rd	-	-	-
	4th	-	-	-
Depression	1st choice	-	-	-
	2nd	-	p, more, 1%	-
	3rd	-	-	-
	4th	-	-	-

APPENDIX 3

Abstract of the thesis, "A Survey of Chronic Disease by Means of the Szondi Test."

A Survey of Chronic Disease by Means of the Szondi Test

Abstract

The study was undertaken to determine whether there was a personality pattern common to individuals suffering from chronic disease, and, in the event that such was found, to explain the reason for its existence.

The Szondi test was administered to the public patients of two general hospitals and a Veterans' Pavilion, in the order of their admission, and, by random choice to the moderately sick patients of two Sanatoria for the Tuberculous. All patients were between 15 and 60 years of age, and of approximately the same socio-economic and educational level. A control group was selected by random choice from public ward patients suffering mild traumatic, minor surgical or mild acute respiratory conditions.

Eight distinct personality patterns were evident.

1. Control group.

2. A pattern common to Atrophic Arthritis, Muscle Tension, Pernicious Anaemia.

3. A pattern common to Asthma, Chronic Chest disease, Tuberculosis.

4. A pattern common to Diabetes, Obesity, Hypertension.

5. A pattern common to Rheumatic Heart Disease, Thyrotoxicosis.

6. Peptic Ulcer, Dyspepsia, Alcoholism.

7. Anxiety State.

8. Depression.

There were 15 patients in each of the following groups- Controls, Arthritis, Chronic Chest Disease, Diabetes, Hypertension, Pernicious Anaemia, Rheumatic Heart Disease, Thyrotoxicosis, Tuberculosis, Peptic Ulcer, Anxiety, Depression. In each of the other groups there were 7 patients. Each patient took the test once.

A strong need for tender love was revealed in each of the chronic disease groups.

A strong need to express aggression existed in the patients with Hypertension, Rheumatic Heart Disease, Ulcer, Dyspepsia and Alcoholism.

A strong need to repress the expression of hostility was found in Arthritis, Pernicious Anaemia, Asthma, Chronic Chest Disease, Thyrotoxicosis and Ulcer.

A strong need to repress tender emotions was found in Arthritis, Pernicious Anaemia, Rheumatic Heart Disease, Thyrotoxicosis.

A strong need to repress unacceptable urges from consciousness was found in Arthritis, Muscle Tension, Asthma, Chronic Chest Disease, Diabetes, Obesity, Hypertension, Rheumatic Heart Disease, Thyrotoxicosis, Ulcer, Dyspepsia, Alcoholism.

A strong need to blame the environment for one's

frustration was found in Pernicious Anaemia, Asthma, Diabetes, Hypertension, Rheumatic Heart Disease, Alcoholism.

A strong need to master the environment was found in Arthritis, Muscle Tension, Diabetes, Alcoholism.

A strong need to cling to objects of the environment for emotional support was found in Muscle Tension, Pernicious Anaemia, Asthma, Chronic Chest, Thyrotoxicosis. The need is strongly denied in Diabetes.

The common personality factor, the need for tenderness, was found to be independent of age, sex, French or English culture, and hospital environment. It was found to the same degree in patients of similar age, suffering the same diseases, who attended the Out-Patient Clinics of one of the general hospitals.

Patients suffering from Muscle Tension, Chronic Chest Disease, Dyspepsia, Obesity and Alcoholism were found to be more dependent and inhibited than those suffering from Arthritis, Asthma, Peptic Ulcer, and Diabetes.

Patients suffering from Arthritis, Asthma, Dyspepsia, Muscle Tension and Rheumatic Heart Disease were found to resemble most those suffering from Anxiety states.

Patients suffering from Diabetes, Hypertension, Arthritis, Rheumatic Heart Disease and Ulcer were found to resemble most those suffering from Depression.

Patients suffering from Muscle Tension, Chronic Chest

disease, Obesity and Alcoholism were found to have fewer characteristics of an Anxiety state than do patients with Arthritis, Asthma, Diabetes, Hypertension and Ulcer.

Patients suffering from Muscle Tension, Chronic Chest Disease, Obesity, Dyspepsia and Alcoholism were found to have fewer characteristics of Depression than do patients with Arthritis, Asthma, Diabetes and Ulcer.

Patients with Dyspepsia, however, show more characteristics of Anxiety state than do patients with Ulcer.

The need for tender love is taken to indicate that it was not satiated in childhood, because of the great strength of the need or because of environmental frustration. It is a sign of emotional immaturity, and the source of conflict. This impression was confirmed by reference to Rorschach profiles on similar patients, by clinical impressions, and the studies of psychoanalysts.

Patients suffering from chronic disease, in addition to a hereditary predisposition and to trauma of other varieties, suffer coincidental mental distress arising from their immature attitudes. To relieve this stress which constantly aggravates the physical state, the administration of adrenal corticoids and all other therapeutic devices can be wholly and permanently effective only in conjunction with skilful psychotherapy.

How about all the other chapters?

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