TREATMENT OF HABITS.*

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This subject having been selected for me by the Committee of the Orthodontia Association, will have to be discussed by me largely in its generic sense and from a biological standpoint. In this way perhaps some suggestions may be brought to light which can be adapted to practical ends in dealing with the pernicious habits which interfere with the important work of your specialty.

According to the Mendelian law, very simply stated, one-fourth of the offspring of a given union will be like one parent, one-fourth like the other, and one-half will be of a mixed type, partaking of characteristics of both parents and capable of further transmitting these characteristics in turn to their children. Investigations into the heredity of insanity, feeble-mindedness, epilepsy, and the neuropathic constitution, have already been made; and in the study of generations of many families in reference to the probability of inheritance of neuro-

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pathic conditions, the actual findings have corresponded with astonishing closeness to the theoretical expectation expressed in the Mendelian theory. It would take too much time and space, however, to discuss the matter at length. According to the same law, variations acquired during the life of an individual are not transmitted to his descendants. It is nevertheless true that descendants are not exactly like ancestors and not exactly like each other. On the theory of evolution we may attribute this variation to natural selection; while heredity helps to perpetuate what natural selection has caused to survive. Environment is a factor in producing inharmonious variations from the normal, and also in destroying them. While both prenatal and postnatal agencies are, of course, concerned in the production of oral conditions which you are called upon to treat, I am inclined to give the former the greater potency. The laws of heredity determine contour and structure and natural characteristics. Habits, on the other hand, are acquired, although tendencies to certain kinds may be predetermined by an inherited faulty mental make-up. A habit spasm, for example, is an evidence of some peripheral physical defect; but it also is found only in those with an inherited neuropathic constitution. Again, habits are readily acquired by nervous individuals and neurasthenics.

Our first thought in the treatment of habits should be to ascertain whether we have a mentally normal individual or an abnormal one to deal with. Speaking broadly, feeblemindedness in a given case may be recognized by the Binet test; dementia praecox by the presence of negativism, stereotypy, mannerisms, etc.; the neuropath by his nervous constitution, faulty heredity, and the nature of his habit which is usually a spasmodic tic; while a very pronounced mental defect, such as we find in idiocy and imbecility, is determinable by simple tests and observation. The jaw condition, which the orthodontist is called upon to treat, and the pernicious habit, which occasionally interferes with his work, may both be looked upon as variations from the normal.

A knowledge of psychiatry, i.e. pathological psychology, is of great help to the physician and student in the understanding of the problems of normal psychology; and both are helpful in the analysis of habits.

Recently, in association with a medical confrère, I have been interested in a study of the significance of habit movements in mental defectives.* In these cases the psychic element naturally plays a less important role than in the normal individual. We pursued our investigations in our own service on Randall's Island and found there that a very large number of uneducable idiots and imbeciles had certain peculiar habit movements which were persistent in type. After a careful analysis of these movements it occurred to me that they all bore some relation to or suggested a sexual libido. They were all referable to certain regions of the body corresponding to what Freud has designated "erogenous zones," and they were of the pleasurable sort, as forced interruptions of the habit movements were resented by the patient, at times even with violence. Out of 600 idiots and imbeciles examined by us, 201 exhibited autoerogenous movements and acts. The erogenous zones to which the habit movements studied could be referred were, in the order of their fre-

quency, the face, the pelvis, and the hand. One hundred and twenty-three, or more than three-fifths of the 201 cases were referable to the face and head zone. These were classified into pleasure suckers (of the fingers, rags, tongue, or lips), with the enormous number of 75; biters of the hand, tongue, or lips, 14; strokers and rubbers of the eyes, 13; strokers of their own or other faces, 13; pounders of the face and head, 6; and aural inserters of fingers or of foreign substances, 2. The autoerogenous movements were carried on continuously for long periods of time, i.e. they were habit movements. For various reasons, unnecessary to mention here, we concluded that the significance of the autoerogenous habit movements and certain apparently senseless acts of uneducable mental defectives are irrevocably bound up with a defective and perverted sexuality of infancy and childhood. Our views parallel those of Freud in sex genesis for the normal child as laid down in his “Three Contributions to the Sexual Theory.” Our discovery has, to my mind, more than a biological and academic interest. It may help in the recognition of very young cases of mental defect. It may help to explain also certain habits and conditions which have been hitherto impossible of control. In a large orphan asulum assembly room we were able by observation alone of about 200 supposedly normal children to select out three cases of mental defect on account of their autoerogenous habit movements displayed. We proved up the cases subsequently by examination and inquiry of the attendant, and were not wrong in any case. The direct application of these remarks to the subject in hand might not occur except in mentally defective cases.

Let us now glance for a moment at certain simple facts in normal psychology in relation to habit. The formation of a habit, psychologically speaking, depends on two things: a sensorimotor connection between stimulus and response and a connection between stimuli. In other words, or to illustrate: let us say that certain sensory impressions are carried from the oral cavity, i.e. the periphery, to the sensory nuclei of the brain. They are there discharged into motor cells which return an impulse to the muscles for the production of voluntary movement. A sensation of the movement is also returned to consciousness. If the same sensorimotor process is repeated indefinitely, a more or less permanent connection arises, consciousness gives little or no further heed, and the motor response to the given stimulus becomes automatic. The initiation of the movement only is voluntary, and the sensation of the movement after a permanent connection has been made is sufficient to set off successive discharges, and the act is repeated automatically and subconsciously. If it takes the form of a spasmodic tic, the repetition of the movement is expressive of a neuropathic constitution. If it appears to have a sexual significance it may be generated in psychopathic soil. Automatic habits of some sort, however, are being continually formed in health, especially in childhood. The kind of habits formed is one of the problems of education which consists mainly in the “learning to make certain responses to certain stimuli, and inhibiting others.” The ability to grasp the significance of the motor element or reaction to given stimuli enables us to see the value of special training. If special training along any lines can be accomplished in a given case, hope may be held out that other special or even general training may be possible in that case. The
present tendency is to interpret in terms of motor adjustments.

The psychology of the child is one of the live topics of the day; and the importance of the motor element in mental life has been steadily gaining in recognition. Those who are content to ignore the actual brain conditions, however, the pathology of mental defectives, are naturally more optimistic of curing their abnormal manifestations than those of us who are brought much into actual contact with them and are familiar practically with these conditions and are unwilling to ignore them. The idiot, speaking broadly, is teachable only in a very limited degree. The cure of habit in those cases is practically impossible on account of the mental deficiencies of attention, memory, etc.

The effect of treatment of habit must always be commensurate in degree with the intelligence of the individual and the strength of the will. It represents for the normal child an adjustment to new conditions. Treatment of habits in the supposedly mentally normal child should be general and special. After all local causes which might give rise to abnormal sensory stimuli have been removed, the general health of the patient must be looked after in every particular and brought well up to par. Faulty conditions of life in the home and school and at play may have to be corrected. The faculty of attention and the will may have to be especially trained. The play instinct should be encouraged, and the social instincts also. Mild punishments for the habit itself may be instituted when there is no mental defect; and also a system of rewards for well doing. Punishment not only brings the automatic habit into consciousness; it also exercises a restraining influence on repetition. A person is less likely to repeat an act attended by unpleasant consequences than he is to repeat one from which he derives a reward. That form of treatment, however, which should have a great influence in the breaking up of faulty habits, both mental and physical, is substitution. The human motor apparatus throughout is capable of adjustment in an indefinite variety of ways, and the nerve centers in a normal individual enable him to acquire power to make these adjustments. Therefore, unless there is really some mental defect or maldevelopment in a given case, there should be an ability to readjustment to a different series of motor acts if we can get the cooperation of the patient. A frequent repetition of substitution acts is, of course, required to bring about a new habit which should be of a corrective nature. The new corrective habit should be simple and if possible pleasurable and not embarrassing. If necessary it may be imitative. Possibly the origin of the faulty habit in the first instance may have been from imitation. If so, contact with the person whose fault was imitated should, of course, be further prevented. This is very important. Imitation in the child is one of the strongest factors in his mental make-up, and even with the grown-up, example is apt to be stronger than precept. The interest of the child must first be aroused, then the faculty of association, and lastly the memory.

If normal children are forced to do as they should for a sufficient length of time, without arousing too much antagonism on their part, the tendency to act in the enforced way becomes stronger than to act in any other way. Though the acts at first are not agreeable the children ultimately take pleasure in doing what they have developed a tendency to do. As one writer has expressed it: "A habit is a ten-
dency to do a certain thing under certain conditions, hence a change in the conditions giving rise to a habit will often change the habit."

The abnormal physical defects which occur in some backward children, that give rise at times to habits, are not always easy of discovery. An apparent lack of the faculty of attention, for example, may be found to be due to defective hearing. A facial spasm may be associated with adenoids, eye-strain, phimosis, or oxyurides. An apparent backwardness may be augmented by errors of diet or faulty hygiene. Very naughty or very troublesome children are not usually entirely normal. They should be carefully studied, and receive special daily attention and treatment. Finger and thumb sucking can be successfully treated in infants only by mechanical restraint. Nail biting is most helped by keeping the nails cut very short. Tic or habit spasm is a not uncommon disorder in late childhood. It is an evidence, as previously stated, of neuropathic heredity, the exciting cause being a deterioration in general health or some local irritation. It may arise from a trick or habit or from imitation. The cause should be sought and removed. Arsenic and belladonna may be used. In cases of tic also the voluntary repetition of the same movement slowly, for long periods of time, is sometimes helpful. Redu­
education and attention to the health are often of greater assistance in the treatment of most habits than psychotherapy. Practising a new habit in front of a mirror may be helpful. If the patient is intelligent and old enough to understand he may be shown pictures and models of perfect jaws and teeth and contrasting models of such as would be produced if the habit were persisted in. Those photographs which I have seen of models by members of your society, are beautiful as models but certainly terrifying as examples. The understanding of one situation makes it easier to grasp others. The long time required to learn a new order (i.e. a change of habit), says one observer, depends rather on indis­
position than on inability. In mental defectives the attention may be obtained by the employment of music, especially of rhythmic music. Active man­
ual employment in the daytime and watchful control at night are safe devices in these cases.

In conclusion, an undesirable habit cannot be in­
hibited any more than an undesirable disposition, but if a patient can be induced voluntarily to substitute desirable responses for the undesirable, a new habit may become automatic after a sufficient number of repetitions. A voluntary surrender of the will, how­
ever, is not only highly desirable, but apparently absolutely necessary in order to gain the ascendancy. The tendency is ever to fall back to the old adjust­
ment. The old sensorimotor paths are open and a very few impulses only are needed to make them as permeable as ever. This may be a more gloomy view of the situation than the facts warrant, but it is based on what would seem to be unassailable bio­
logical and psychological lines. As to the physical treatment of faulty oral habits, by mechanical de­
vices, etc., no doubt your own ingenuity will dis­
cover the proper correctives. These will not succeed in mental defectives as a rule. And in the presence of actual nervous or mental complications, I would inject a word of caution, not to meddle except under the intelligent direction of one who thoroughly understands the nervous system.

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