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SOME FURTHER CONSIDERATIONS CONCERNING THE TREATMENT OF NEUROSYPHILIS *

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While dogmatism has no place in medicine, it is especially unfortunate in the weighing of evidence and the evaluation of data in the tentative endeavor now being made to determine the most efficient form of therapy for the treatment of neurosyphilis. Cotton manifests the true scientific spirit when he says that with a spirit of open-mindedness every method should be given a thorough trial, and that it is only by continual experimenting with new ideas that we can hope for progress in this new line of endeavor. If an apology were necessary because of my selection of this much discussed subject, it were best made in the words of Southard: "That no more important human problem now exists than syphilis, and that neurosyphilis is a highly important fraction of the total problem."

The three principal methods of procedure in the treatment of nervous syphilis are intraspinal, intracranial (subdural or intraventricular) and intensive. Are all of these methods of equal value, or is any one of them what we might call outstanding? Certainly the ultimate procedure, the ideal method, is yet to be evolved. Intraspinal medication has never had a fascination for me, neither have I been a victim of this belief. I have simply been impressed with the results I have observed which were in such striking contrast to those formerly obtained from the routine forms of procedure. While I have been interested in the physiologic discussion concerning the value or usefulness of intraspinal medication, yet the observation of the fact that patients in whom intravenous medication had utterly failed made apparently good clinical recoveries under the administration of the former, outweighed in my mind all theoretical or academic discussion. In over 800 intraspinal injections, we (Riggs and Hammes) have never seen one untoward result. In the light of this experience, the statement of Halliburton that "the use of salvarsan [arsphenamin] in locomotor ataxia and similar late syphilitic affections via the cerebrospinal fluid has been abandoned, as it is fatal not only to the syphilitic organisms but also to the patient," has been shown to be absolutely baseless as to fact, neither do I agree with Sachs "that there is nothing which the intraspinal method achieves that cannot be accomplished by the

intravenous." Fordyce tells us that he has seen generalized exfoliative dermatitis, persistent forms of gastro-enteritis, nephritis and obstinate jaundice follow intensive medication. Neither in regard to safety, then, nor in results obtained, is it to be preferred in properly selected cases to the intraspinal method. No one believes that it should be used to the exclusion of the intravenous method.

Under normal conditions, the choroid plexus is believed to be impermeable to the passage of all but a few drugs, but this does not always obtain, because in certain cases remedies introduced intravenously do reach the cerebral and spinal tissues. Barbat says that by the reduction of intraspinal pressure the permeability of the meninges to arsenic can be greatly increased and that arsenic can be made to pass into the spinal fluid in more than 96 per cent. of the cases suffering from tabes and paresis; he also believes that the antibodies in the blood serum which in this way gain access to the spinal fluid play a more important part than the small proportion of arsenic contained therein. Should this contention prove well founded, the potentialities of intensive intravenous medication are very greatly increased. Dr. Sachs' assertion that serious forms of paresis and tabes have not been favorably affected by intraspinal injections, and that nothing has been accomplished by them that could not be obtained by the intravenous method is absolutely at variance with my experience during the past four years. Personally, I have known of no advocates of the Swift-Ellis procedure to claim that paresis could be cured, although Southard states that by means of systematic intensive treatment, even "paretic neurosyphilis seems to have been cured." "Theoretically," says the same author, "we should approach all cases of neurosyphilis without bias or nihilistic prejudgments." In the past, we have repeatedly stated that the results of intraspinal treatments in tabes have been notable, that in over 70 per cent. of our cases (Riggs and Hammes) both blood and spinal fluid have become negative and that tabetic pain, gastric crises, bladder symptoms and the ataxic gait have been relieved as the result of this treatment. As to paresis, we have insisted that this form of therapy greatly increased the number of remissions and modified favorably the course of the disease, enabling many patients to pass their last days in the home environment.

Treatment of paresis by intraspinal injections has been the method adopted at Bloomingdale since 1912; thirty-five cases have been treated by Dr. Amsden since that time. Two were given intraventricular injections. Of eighteen cases in which no remission occurred, in six there were prolonged periods of arrest of the progress of the disease, fourteen patients died with an average duration of the recognized course of

* Chairman's address, read before the Section on Nervous and Mental Diseases at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

the disease, two years and four months. Remissions of six months to two and a half years or more have occurred in 40 per cent. of the cases; long periods of arrest in 17 per cent. "These results," says Amsden, "justify persistence in the use of a form of treatment which has thus far been the only ray of hope for the sufferers from an invariably fatal disease. Cotton states that with the original method of Swift and Ellis, 33 per cent. of the patients were distinctly benefited and enjoyed remissions of from two to four years, and that a small number are still normal. He also thinks that this form of treatment is the most efficient one for tabes and syphilitic meningitis. These statements of Amsden and Cotton are in striking contrast with that of Finlayson, who says that the Swift-Ellis method was tried at the State Hospital at Warren, Pa., for two years and that the indifferent results did not justify its continuation. Fordyce believes that it is to be preferred in tabes, meningitis, meningomyelitis, meningo-encephalitis and in optic atrophy with positive fluid. That optic neuritis in the absence of all findings both clinical and serologic may sometimes be benefited by treatment is shown by the report of the following case recently seen with Dr. Hammes: A man 40 years of age; paper-hanger; contracted gonorrhea twelve years ago; at that time there were some sores on the penis which were regarded as nonspecific. For five months he had suffered from failing vision. This was so marked that he had to be led around. There were no symptoms of syphilis—clinical or biologic. Treatment gave prompt relief. He is again at work and can match paper without difficulty. Reasoner, Fordyce and myself have reported cases of syphilitic meningitis and meningomyelitis occurring respectively four and six months after the initial lesion which resulted in death. Fordyce thinks that intraspinal treatment given at this time acts more rapidly than in older infections and offers the only chance of cure and prophylaxis against later degeneration. Cases of nervous syphilis occurring in the florid stage of syphilis in spite of intensive medication, according to this writer, either die from intense meningitis or become candidates for paresis, tabes or cerebrospinal syphilis. All such should be treated intraspinally. Cases of abortive tabes, where the fluid shows no pathologic change, we have seen greatly benefited by intraspinal medication, notwithstanding the generally accepted belief that it is contraindicated in these patients.

All neurologists are familiar with the notable work done by Cotton in neurosyphilis; it is earnestly to be hoped that many other state hospitals will be stimulated by it to a spirit of research and healthful medical activity. Red tape, archaic routine and the dominance of the idea that custodial care, not treatment, is the true function of a state hospital, paralyzes all progress and creates the deadly atmosphere of an almshouse rather than that of a psychopathic hospital. Wardner, Hammond and Sharpe, Cotton and others, have called attention to the intracranial method in the treatment of paresis. Both Hammond and Cotton regard it as the most efficient procedure in paresis. The former believes that injection into the ventricle is much to be preferred to the subdural method, especially if there be thickening of the pia. The latter uses both the subdural and the intraventricular, beginning with the former for three or four doses, then giving at least five injections into the ventricle. In fifty-one cases treated last year by Cotton and Stevenson, some too far advanced for therapy to be of avail, remissions were

obtained in twenty cases. All of these were able to leave the hospital and only two have returned. Intracranial methods allow of larger doses of arsphenamin and more frequent administration; usually a small dose is given (0.3 gm.) intravenously and the serum reinforced with 1 mg. of arsphenamin. The various serums, the Ogilvie, the mercurial after Byrnes, the Swift-Ellis, arsphenamin in physiologic sodium chlorid solution, have been tried; while cases have received benefit from all, the Swift-Ellis has proved the most efficient (Cotton and Stevenson). In early paresis, the preparetic stage, where the process is limited to the meninges and the spirochetes have not invaded the cortex, the Swift and Ellis method will prove efficient. In confirmed forms of the disease, the effect of this treatment is not lasting and patients suffer relapse; it is not sufficiently intensive.

The most popular form of therapy in neurosyphilis is that of intensive medication with draining of the spinal fluid. The beneficial results obtained by repeated injections of arsphenamin and mercury have been explained on the supposition that the impermeability of the choroid plexus to drugs has been overcome by mass attacks Teutonized, as it were, by brute force, so that it was no longer able to resist the passage of spirocheticidal drugs to the spinal fluid. By intensive treatment is meant injections of arsphenamin twice a week (from 0.3 to 0.6 gm.) along with continued injections of mercury. Solomon says that in the Massachusetts series, intravenous injections are given at least twice a week and that from forty to fifty, even to a hundred injections, are sometimes given in a period of a few months in conjunction with mercury and iodids. The dictum of Southard that "no one can now successfully make a differential diagnosis between the parietic and the diffuse nonparietic forms of neurosyphilis in many phases of either disease, even with all laboratory refinements," makes it imperative to treat all cases in which differentiation is impossible. But this does not reach the crux of the matter. Grave symptoms found in paresis or tabes are by no means necessarily indicative of serious anatomic change. This is true as regards loss of memory, disorientation and apparent mental disintegration in the former or the characteristic clearly defined symptoms of the latter; irritation and functional perversion of neurons, not their destruction, being the probable cause. Meningeal inflammation plays an important rôle in the evolution of symptoms not only in cerebrospinal syphilis but in paresis and tabes as well. The clinical syndrome, therefore, be it ever so grave, does not of necessity mean a deteriorated brain or a degenerated cord. The only way, therefore, of doing justice to all because of this camouflaging of the incurable by that which can be cured or at least definitely ameliorated is to treat all.

The New York Psychiatric Society recently appointed a committee, of which Dr. Dana is chairman, to investigate the problem of the early recognition, treatment and prevention of paresis. The importance of this subject will be better appreciated if one considers the whole range of syphilitic mental disease, namely the psychoses resulting not only from paresis but from cerebral syphilis and tabes as well. The average number of patients treated for syphilitic mental disease in the state hospitals of New York during the fiscal year ending June 30, 1917, was 1,554, and it has been estimated that the economic loss to the

state was \$5,398,644.99 (Pollock). Because of this menace to the social order, it has been proposed to establish a hospital near New York City for the detention and treatment of syphilitics. Since Wile and Stokes maintain that probably every case of florid syphilis shows changes in the spinal fluid and that clinical symptoms of neurosyphilis of this period can probably be determined, and since also the same claim holds equally true with reference to the primary period, and as it is not improbable that these patients are potential candidates for syphilitic mental disease, it is believed by many that early intensive treatment may prevent involvement of the nervous system. The future of the syphilitic and the possibility of anticipating or arresting degenerative change, Fordyce thinks, depends largely on early and regular examination of the spinal fluid. My experience is not in accord with the assertion of Sachs "that there is absolutely no correspondence between a change in the cerebral content and the condition of the patient." Usually clinical improvement and biologic reduction sustain a direct relation the one to the other. Neurologists are familiar with certain cases in which this does not occur. Ayer points out "that frequently one may be able to reduce the cells and proteids to normal, and yet the Wassermann reaction persists and the patient shows no advancing symptoms." Fordyce calls attention to the relation existing between the clinical symptoms and spinal fluid findings in early syphilis associated with an acute meningitis, namely to the improvement corresponding with the biologic reductions; to the temporary remissions occurring in paresis and taboparesis, in which the spinal fluid shows no change aside from that observed in the cell count and the globulin; to the improvement that may occur in the spinal fluid while progressive mental deterioration goes steadily on. Aside from the two exceptional conditions noted he believes "that there is an intimate relationship between the clinical symptoms and the fluid findings."

Gains states that "In the serologically negative cases, there is corresponding clinical improvement, although frequently clinical improvement or apparent cure may take place even in the presence of a positive Wassermann." The most vigorous arsphenamin therapy may, according to Southard, fail to render the spinal fluid negative, yet the clinical condition may improve so greatly that the patient may be regarded as clinically recovered. For the past two years I have had under observation two cases of cerebrospinal syphilis, in both of which the blood became negative and the cell count and globulin normal, but in spite of the most persistent treatment the spinal fluid gave a positive Wassermann reaction. While one patient made a clinical recovery, the other has constantly suffered from subjective symptoms indicative of nervous syphilis. Unfortunately, as to the real significance of the spinal tests, their relation the one to the other, their prognostic importance and their response to treatment, but little is known. Without doubt, they are indicative of a pathologic condition in the nervous system. "They do not all represent," according to Southard, "the same inflammatory products and chemical conditions. They are prone to occur independently and they disappear under treatment at different rates." "The gold precipitating substance," says Weston, "is not the Wassermann producing substance," neither are the globulins and albumins believed to be the same. The colloidal gold test may become negative while all the other tests remain positive. Then again these may be prac-

tically negative, while it continues positive (Solomon). Solomon and Koefod tell us that the cell count is of no prognostic importance in syphilis of the nervous system unless there is an improvement in the other spinal tests, neither is it of aid in a diagnosis between paresis and cerebrospinal syphilis, nor does it give information as to the duration of the activity of the process or its severity.

Out of all this chaos, one fact seems to be patent: The rendering of these tests negative under treatment indicates a disappearance of the inflammatory reactions from which they arise and an arrest of the disease. As to the permanence of this improvement, with our present knowledge, it would be unwise to predict. Neither can one develop a spirit of optimism with reference to those patients in whom the biologic reactions are only partially or not at all influenced by treatment. It is well to recall the remarkable case of paresis reported by Tuczec; in this paretic, there was a complete remission for twenty years. What nature has once done, she may do again. While this is an exceptional instance and can afford but meager comfort, yet it must be kept in mind when considering these cases of clinical recoveries in which there is no correlation between laboratory findings and clinical betterment. I cannot help but feel that in all these cases of clinical improvement without serologic changes, a recurrence of symptoms with a progression of the disease ever impends and is ultimately inevitable. "Any method," says Lautman, "which produces a negative serology in addition to improvement of the clinical symptoms may be deemed efficient."

All of the three preceding methods (the intraspinal, intracranial and the intensive), in the light of our present experience, may, therefore, be called efficient. This is particularly true as regards cerebrospinal syphilis and tabes dorsalis, and even in paresis, the most hopeless of all the manifestations of syphilis. The accomplishment of these two purposes has in a measure met with success—certainly not with a lamentable failure. It is a well known fact that the percentage of remissions is much greater in treated than in untreated paresis. In 127 patients observed by Cotton, remissions occurred in about 4 per cent. of the cases. In a summary of 300 untreated cases of paresis, but five, says Solomon, left the hospital able to work, while in the treated cases, about 25 per cent. were able to leave self-supporting. The Massachusetts workers, according to him, do not claim cures, but they do claim "improvements." Paresis, he believes, is amenable to treatment to the extent of the restoration of the ability to work for a period, and this he says "is something of an achievement." According to Dr. Pearce Bailey, "treatment has a decided effect not only on the symptoms of paresis, but also on the working capacity of the individual." Dr. Fordyce thinks that little can be expected from the intraspinal or any other form of treatment in paretics, when the stage of institutional care has been reached. "The most that can be hoped for is temporary arrest of the encephalitis." It is in the cases of meningo-encephalitis—the preparetic type—in which this method is efficient. Hammond and Sharpe regard intraventricular injections as superior to both the intradural and intraspinal methods in the treatment of paresis, and they believe that in skilled hands it is practically free from danger. Solomon states that the Massachusetts workers have obtained improvement by every method used. Cotton, who has had an unusually extensive experience during the last

four years, regards the intracranial method (both subdural and intraventricular) as the most efficacious in the treatment of this disease. Since he has had no serious results following its use, he thinks it should be continued.

The present attitude of those most experienced in the treatment of nervous syphilis is best expressed by Southard: "While it has always been conceded that treatment would greatly help cases of diffuse and vascular neurosyphilis, the utmost pessimism has existed concerning the results to be obtained by treatment in cases of tabetic and parietic neurosyphilis, . . . and though it has been by no means settled in the minds of the various workers in this field as to what the ultimate results of such treatment will be, . . . still the majority of men who are treating these cases systematically feel very much encouraged."

THE PERSONAL EQUATION IN PSYCHIATRY *

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In one sense of the term personality may be said to be everything in insanity. This is not to say that insane patients never fit well into types; it simply means that the study of personal character, of responsive reactions to environmental stimuli, of conduct and expression, are and always will be of paramount importance in investigations seeking to establish the psychologic status of the individual. It means, furthermore, that the hardest things to extinguish in an individual are the things that mark him off from other individuals. It may be said that this is a matter of inference only, but it seems to be in accordance with the facts. There is nothing strange about this, since memory plays as large a part in experience as experience does in personality. Conscious memories form the principal line of demarcation between individuals, and with extinction or great reduction of conscious memory we have concomitant narrowing of the field of consciousness. To just what extent unconscious memory comes into play to enliven the stream of consciousness is very difficult to say. A greatly confused and apparently amnesic patient with hallucinations of hearing has some basis for the recognition of the voices which he hears. We say that he imagines the voices and this is true enough, but how can he imagine that which he is not aware that he has ever heard? As a matter of fact, memory, either conscious or unconscious, supplies the necessary factors of recognition and convinces him that the sense perception, albeit false and objectively unreal, is the sound of a human voice. To be sure, the patient may maintain that it is the voice of Deity or of the King of Siam, whom he has never seen, but this proves nothing except that he is familiar with the human voice or else that he attributes to Deity or the Siamese King a mode of expression somewhat different and resembling, for example, the notes of a pipe-organ or of a nightingale. For obvious reasons, the congenitally deaf do not hear voices. Whether they have or imagine that they have sense perceptions which stand to them for a hypothetical human voice is another question.

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Can personality be of etiologic significance in the determination of insanity? It can be, if by personality we mean that individual set or bias which creates a presumption in favor of either normality or abnormality in reaction to difficult circumstances, or in other words a fortunate or an unfortunate outcome of an adverse situation. The working out of the problem is a matter of personality, but what, forsooth, is personality? Modesty forbids an attempt at the colossal task of adequately defining this concept, but let us say that it has to do with aptitudes both inherited and acquired (provided there is such a thing as an acquired aptitude), with knowledge and its expression, or so to speak with knowing what to do and how to do it. These things enter into personality, which is made up largely of habitual modes of thinking, feeling and acting, of habitual ways of looking at things and doing things. What is it about the person that causes him to become insane? Not to overstate the case at all, if we could answer that question we would be flooding the field of psychiatry with such a light as shines now only on the exact sciences. As fast as we are able to introduce factors of precision, we will discard the speculative and the inferential, but with such a wealth of speculative material at hand we are sometimes in danger of forgetting that surmise and conjecture cannot fill the place of well grounded categorical affirmations. The field of fancy is filled with devious paths which do not always lead to the straight and narrow exit.

We cannot but be impressed by the tyranny of personality when we compare the introcentric and subjective precocious dement with the exocentric and objective maniac, but after all we cannot tell which component in the etiology has the greater effect in determining the psychosis, whether the personal make-up or the hypothetic disturbing factor, though very likely the former rules. In other words, given a set of similar adverse factors in two persons, each will respond with the psychosis for which the stage was set in the beginning. Now perhaps this is true and perhaps it is not, but at any rate it is a fascinating conjecture which leads us dangerously near to determinism. If certain people are to become insane and are to become insane only in a certain way, what is the use of all our therapeutic endeavor? A liberal psychiatry can hardly rest under the restraint of such freezing philosophic dogma.

It is sometimes very plausibly said, even by the laity, that there is nothing strange about a given person becoming insane, because he always seemed like that kind of a person, the insanity being in character or keeping, so to speak, and simply an exaggeration of existing traits or tendencies. Lay observation is sometimes acute, though without reasonable criteria as to causation. It often partakes of the mysterious and of the trivial. While it is impossible to deny that grief, worry, sunstroke or change of life may have something to do with insanity, it is highly improbable that they will cause it in the absence of the necessary determining factors. Why do some men with disease of the heart or the lungs or the liver become insane while some other men with disease even of the brain do not become insane? It is indeed astonishing what gross insult the brain will sometimes tolerate without resulting mental disintegration, and this brings us to the very interesting question as to whether the essential adjustment to adverse factors is made by the brain or by the mind or by both together.