

Argyll Robertson pupil, and has developed on the hemiplegia a typical tabes dorsalis. In another patient there was paralysis of the right third nerve, with complete iridoplegia, the left pupil did not react to light on admission, but recovered fully under treatment. In six patients the pupil reaction to light was sluggish, but not absent, and in three of them became much more brisk under treatment. One of these suffered from epileptiform fits, both general and localized, with headache and vomiting; two from hemiplegia, with headache and vomiting; one from meningitis of the convexity, with hemiparesis, cranial nodes, and double optic neuritis; the fifth was a patient with hereditary syphilis, with cerebral symptoms and optic neuritis; and the sixth was a patient suffering from syphilitic cerebro-spinal meningitis, with hemiplegia and intense optic neuritis. So that optic neuritis, in varying intensity, was present in three of the six cases with a sluggish reaction; optic neuritis does not, of course, abolish the light reaction. Of the 21 spinal cases, in one the light reaction was sluggish, and in two the Argyll Robertson sign was present. Of the latter, one was a rather remarkable case. The patient was a man, aged 32, who had had left hemiplegia two years before, from which recovery was not complete. When admitted, he was dull, apathetic, and had some mild delusions as to place and as to his circumstances. The cord affection corresponded to Erb's syphilitic spinal paralysis, and was of very gradual onset, with the usual affection of the bladder, great exaggeration of deep reflexes, and double extensor plantar reflex. The pupils were very small. He made, under mercurial treatment, an unexpectedly good recovery, both as to his mental and physical state, and was able to return to work. The Argyll Robertson sign persisted. In the other case the cord affection was of the same kind, with no affection of sensation, no ataxy, and no symptoms except slight incontinence beyond those clinically referable to degeneration of the pyramidal tracts; the disease was also of very gradual onset.

It is an interesting point that the only cases presenting the Argyll Robertson sign amongst my cases of syphilitic disease of the cord are cases belonging to the clinical group of syphilitic spastic paraplegia, first described by Erb. Wilfred Harris⁴ states that in Erb's syphilitic spinal paralysis "sluggishness of pupils, or even complete reflex iridoplegia may, however, be met with." Although presenting the same clinical features, it is probable that these cases do not all own the same pathology. If some of them are due to a primary degeneration of the pyramidal tracts as a result of syphilis, then they would represent a degeneration of the efferent neurones analogous to that of the afferent fibres in tabes, and come under the parasymphilitic affections. Harris quotes Wimmer as stating that in only 4 cases examined pathologically was there a pure degeneration of the pyramidal tracts, but it may be added that the records of autopsies are few. From the recorded cases Nonne⁵ gives the following four conditions as underlying this form of paraplegia: (1) Chronic myelitis in patches, with ascending and descending degenerations; (2) these changes combined with a primary degeneration of the pyramidal tracts; (3) degeneration of the pyramidal tracts only; and (4) a combined primary postero-lateral tract degeneration.

I suggest that it is with the group of pure degeneration of the pyramidal tracts that the Argyll Robertson sign will be found associated, and that the condition is a parasymphilitic one.

In connexion with syphilitic spinal disease, it may be added that Dr. W. Harris⁶ found "complete or partial Argyll Robertson pupil" in three cases of chronic syphilitic poliomyelitis. These cases were a very late sequel of syphilis, in one of the three appearing twenty-five years after infection.

In analysing the above cases, I have not taken into account a unilateral loss of the light reaction, because it is then more difficult to exclude local causes; in four or five of the cases unilateral loss occurred in association with paralysis (complete or incomplete) of the third nerve on the same side. Moreover, if the Argyll Robertson sign is rightly considered as the selective action of a poison, both pupils should be affected. So far as my cases go, therefore, they entirely support the contention that this sign is not a symptom found in pure cerebro-spinal

syphilis, and that its presence is an index of a degenerative process at work in the nervous system.

The contrast with tabes and general paralysis, in which the sign is present in about 70 per cent. or over of the cases, is too striking to call for further remark.

In testing the cases no further precaution was taken than always to place the patient opposite a good light (daylight), cover both eyes, and see that they did not accommodate.

I have referred throughout to the fully developed Argyll Robertson sign only, because merely sluggish pupils, although in certain connexions suggestive, have not the same clinical significance. Further, it is now certain that in recent cases and under efficient mercurial treatment, an absent light reflex may sometimes be regained.

There are one or two other conditions under which the Argyll Robertson sign may be present, but the associated symptoms should prevent any error in diagnosis. Thus, Dr. Farquhar Buzzard,⁷ in the discussion on ophthalmoplegia, mentioned cases in which the sign was present in cysts of the third ventricle, and in tumours of the optic thalamus extending to the corpora quadrigemina. Other observers have also noted it in lesions of the corpora quadrigemina, but it does not invariably accompany them. It is also present in optic atrophy, but not in optic neuritis.

REFERENCES.

- ¹ BRITISH MEDICAL JOURNAL, 1910, vol. ii, p. 1317. ² *Proc. Roy. Soc. Med., Neurological Section*, vol. iii, No. 4, p. 47. ³ BRITISH MEDICAL JOURNAL, 1905, vol. ii, p. 1634. ⁴ Allbutt and Rolleston's *System of Medicine*, 1910, vol. ii, p. 728. ⁵ Quoted by Williamson, *Diseases of the Spinal Cord*, London, 1900, p. 344. ⁶ *Loc. cit.*, p. 731. ⁷ BRITISH MEDICAL JOURNAL, 1910, vol. ii, p. 1319.

TUBERCULIN DISPENSARIES.

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IN order to determine the attitude of those members of the medical profession who are specially competent to express an opinion upon the subject, inquiries have been made by the medical superintendents of most of the principal sanatoriums of England and Wales as to the value attached by them to the use of tuberculin.

The replies received show clearly that tuberculin is a remedy viewed with favour by the large majority of the medical superintendents of the sanatoriums of the country. The view of Dr. Wilkinson and Dr. Fraser, M.O.H. Portsmouth, that tuberculin is a useful therapeutic agent in the treatment of pulmonary consumption, is thus endorsed.

When we consider the types of cases suitable for the administration of tuberculin, we are confronted with considerable diversity of opinion. Broadly speaking, however, we may conclude that the majority of competent observers are agreed that the most suitable cases are the early, not markedly febrile, group, and that the remedy is contraindicated in mixed infections and in acute febrile cases. In other words, expert opinion inclines to the view that the cases suitable for the administration of tuberculin must be carefully selected.

In the next place the question was asked whether tuberculin was a remedy which might be safely and properly administered at a tuberculin dispensary where the patients attend once or twice a week for the purpose of receiving injections. To this question the replies received were practically unanimously in the negative, the opinion being again and again expressed that tuberculin as a therapeutic agent ought only to be administered with caution and under conditions of the most constant and careful control.

The fourth question asked was whether the establishment of tuberculin dispensaries could replace sanatoriums. To this question the answers were emphatically in the negative.

Finally it was asked whether the best conditions for the administration of tuberculin were not such as obtain in sanatoriums where the patient is under constant skilled supervision and control. In every case the answer was in the affirmative, the opinion being frequently stated that these conditions were precisely those which justified the use of tuberculin for therapeutic purposes.

The views of the sanatorium authorities may be summed up in the statement that in their opinion tuberculin is a useful remedy in certain types of cases, but that it must be administered with care and with extreme watchfulness, and that the sanatorium affords the ideal means of securing these safeguards. Tuberculin, therefore, is, in the opinion of the gentlemen consulted, to be regarded as a useful accessory to the methods of sanatorium treatment.

The evidence adduced by Drs. Fraser and Wilkinson is insufficient seriously to shake the expressed opinion of so many authorities of equal eminence and experience, evidence which is emphatically in opposition to the views expressed in Dr. Fraser's report to the Portsmouth Town Council. The present state of our knowledge on the subject does not justify the conclusion arrived at by Dr. Fraser, and my opinion is that the indiscriminate administration of tuberculin in a tuberculin dispensary is a procedure not justified at the present time. My reasons for adopting this view are briefly as follows:

It is admitted by Dr. Fraser that the majority of cases of phthisis occur amongst persons of the poorer classes, patients who (I cannot express it better than in Dr. Fraser's words), "on entering the sanatorium, exchange a hard existence where they are often badly fed, and live under insanitary conditions, for a life of rest, good food, and careful medical supervision."

It has long been recognized that the treatment of pulmonary tuberculosis by direct attack upon the tubercle bacillus holds out, in the present state of our knowledge, no hope of success. It has also long been recognized that *post mortem* records show that many individuals have suffered from pulmonary tuberculosis at some antecedent period of their existence, that these individuals have from some cause or another been successful in overcoming the attack of the tubercle bacillus so completely that no evidence has been forthcoming of the presence of the bacillus during the life of the individual. It is further recognized that the tubercle bacillus is practically omnipresent under conditions of modern civilization, so that practically the whole of the civilized world has been exposed to the opportunities of infection. It is therefore clear that the civilized human race is possessed of a high antagonism to the attack of the tubercle bacillus, an antagonism which may be either intrinsic or acquired. From the present point of view it matters little which it is.

It is clear, therefore, since direct attack has been found to be at the present time hopeless, that the line of action in the treatment of tuberculosis is to take advantage of the natural resistance to the attack of the tubercle bacillus, and by appropriate means build up the cell vitality so that the cells of the body become capable of overcoming the bacillus.

Viewing the cells of the body from the standpoint of pulmonary tuberculosis alone, we require to recognize the conditions under which they are best capable of overcoming the attack of the tubercle bacillus. Experience has shown that the cells endowed with the highest degree of vitality have the best chance of success, and that it is those individuals whose cells are not sufficiently nourished who suffer from developed pulmonary tuberculosis. It is clear, therefore, that, if any individual who has developed pulmonary tuberculosis to such a degree as to show clinical manifestations continues to exist under the conditions which primarily rendered his cells incapable of overcoming the attack of the tubercle bacillus, the tendency will be for his cell resistance to continue to diminish in consequence of (1) the persistence of the primary conditions, and (2) the superadded disability of the toxins of the tubercle bacillus. If, therefore, treatment is to be carried out under conditions holding out the best chance of success, we must either remove the individual from the conditions which caused the primary lessening of resistance, or we must remove the conditions which predispose to lowering of tissue vitality.

Those conditions which prevent the incidence of the disease are precisely those which afford the patient the best chance of recovery in the case of the exhibition of the phenomena of the developed disease. Experience shows that we cannot hope for cure if the patient continues to exist under the conditions which caused the disease. In spite of the inevitable teaching of experience, however, it is alleged that there is a remedy so potent as to neutralize and overcome all environmental disability. According

to Dr. Fraser and Dr. Wilkinson the remedy is forthcoming in tuberculin. These gentlemen believe that the evidence at their disposal justifies them in leaving patients during the time they are undergoing a course of tuberculin treatment under conditions in which, instead of a life of rest, good food, and careful medical supervision, such as obtain in a sanatorium, they lead a hard existence, where they are often badly fed, and live under insanitary conditions. We are asked to believe that tuberculin, undoubtedly a useful therapeutic agent, is of such enormous potency for curative purposes that it can so stimulate the cells of the body as to enable them to increase their resisting power to such a degree as to neutralize and overcome the attack of the tubercle bacillus, whilst at the same time these very cells are engaged in a struggle to the death with extrinsic devitalizing influences.

If this is the case, it is a most extraordinary coincidence that men who have devoted years to the study of tuberculosis, who have used tuberculin systematically since it was introduced by Robert Koch, who have experimented with the dosage, and who have persisted in the use of the agent in spite of the obloquy which fell upon it after Virchow's indictment, have all apparently failed to realize the true curative properties of the remedy. I need only mention the work of Dr. R. W. Philip of Edinburgh, who has advocated consistently for many years the use of tuberculin in suitable cases and with suitable safeguards.

We cannot throw aside the oft-repeated warnings of men of profound experience that tuberculin is a potent substance, capable no doubt of accomplishing much that is good, but at the same time requiring extreme watchfulness in its administration. As Dr. Bardswell states, it may be administered with success by a man of experience, but disasters will occur even with the most experienced.

If tuberculin is to be used in a manner fair alike to the patient and to the remedy, it must be used under conditions which will ensure the minimum of risk. I do not believe that sufficient evidence has been adduced to justify its indiscriminate administration in a dispensary, even in the hands of the most experienced.

A fact of profound significance with reference to the results to be obtained by tuberculin may be here mentioned. It is a fact well known to bacteriologists that the best results of a serum or a vaccine are secured if the strain of the organism causing the disease and that from which the vaccine or serum is made are one and the same. It is for this reason that autoinoculation in tuberculosis holds out such prospects of success. Now in the indiscriminate administration at a tuberculin dispensary the question of strain as between the patient and the remedy is a matter of pure chance. The question of strain no doubt helps to throw light upon some discrepant results.

In conclusion I express the conviction that the present state of knowledge does not incline us to the view that the establishment of a tuberculin dispensary under such conditions as proposed is an advisable procedure. I believe, on the other hand, that the value of tuberculin will be best shown in a proper institution where the patients can receive that skilled control which the vast majority of authorities are agreed is essential to the safe and proper administration of the remedy.

Dr. Fraser's report is one of the best arguments yet produced in favour of the institution of sanatoriums, where the patients may not only receive tuberculin under proper conditions, but will also get that good food, rest, and proper medical control which is so essential to permanent cure. If tuberculin is as useful as it is stated to be then its use will greatly shorten the stay of patients in the sanatorium, thereby enabling the institution to pass a greater number of patients through its gates. That the results of sanatorium treatment are often disappointing merely shows that good air, good food, and proper medical supervision are not in themselves always sufficient to give the cells of the body the necessary stimulus. If tuberculin can be so administered as to supply to the cells of the body the necessary specific stimulus then the success of the sanatorium must be assured.

THE German Balneological Society will hold its thirty-second annual meeting this year in Berlin. The proceedings will begin on March 2nd and end on March 6th. A number of the communications promised relate to radium emanations and radio-activity. The General Secretary is Dr. Brock, 52 Thomasiustrasse, 24, Berlin, N.W.