full duty; they were put upon home service for a time, and later were returned to the Front. Many, however, would never be able to go back to the Front. He had not previously had any war experience, but he believed there was no more troublesome person to be dealt with than the vomiting hysteric, nor a more troublesome person to keep right. The man whom he mentioned as having been discharged from the Army had been sent back to the Front, but a few days later he was returned, and went to a provincial hospital, from which he was sent to him, the speaker. He vomited four times a day for nearly two years. His case was fully discussed, and it was felt that he was only a case for discharge from the Army.

The personal question was an important one; the patients must be dealt with as individuals. As to whether some of these men would be any good if sent back, certainly they would. They kept touch with their patients when they went out. One of them recently received the D.C.M.

He was able to confirm Dr. Sergeant's personal experiences from cases he had had. A boy recently told him that he always had diarrhœa after a Rugby match. Urinating was quite a common concomitant of examinations.

Dr. Fothergill talked about the need for firmness in these cases. Of course there must be firmness of treatment: but if a man were returned to the Front simply after having got him to take solid food, he did not think there had been a cure, because the cause had not been removed.

Dr. Drapes' instance, and the way he dealt with it, showed he was carrying out psycho-analysis and common sense, and that was what he himself claimed to do.

IRISH DIVISION.

THE AUTUMN MEETING of the Irish Division was held at the Royal College of Physicians, Dublin, on Thursday, November 2nd, 1916.

The following Members were present: Major Dawson, Drs. Drapes, Rainford, Mills, J. O. C. Donelan, Irwin, H. Eustace, Rutherford, Redington, Leeper (Hon. Sec.).

Dr. Drapes having been moved to the Chair, letters of apology for unavoidable absence were read from Dr. Hetherington, Londonderry, and Dr. Nolan, Downpatrick. Letters were received from the representatives of other members stating that they were prevented from attending owing to their military duties.

Before the business of the Meeting was proceeded with, the Hon. Sec. drew the Chairman's attention to the loss which the Division has sustained since its last meeting by the deaths of Dr. Charles Fitzgerald, late President of the College of Physicians, and Dr. Kirwan, Superintendent of Ballinasloe Asylum. Resolutions of sympathy with their families were proposed by Dr. Rainsford, seconded by Dr. Mills, and passed in silence, the members standing in their places, and the Hon. Sec. was directed to forward these resolutions to their respective families. Dr. H. Eustace, in the absence of his brother Dr. W. Eustace, who was prevented from attending by illness, kindly proceeded to introduce the discussion upon "The General Paralysis of the Insane, with especial Reference to Recent Modes of Treating this Disease," which stood in his brother's name on the agenda paper.

DR. EUSTACE'S INTRODUCTION OF DISCUSSION.

It is with very considerable trepidation that I venture to present a paper in accordance with the wording on the agenda, *viz.*, "The General Paralysis of the Inane, with Especial Reference to Recent Modes of Treating the Disease."

My difficulty lies in the fact that I have only nursed cases of this disease, and I have never had an opportunity to adopt any of the modern lines of treatment by the new arsenical compounds, etc.

However, I have emulated the industrious mole, and by burrowing in the works of some savants I have raised a trifling mound, which may possibly interest you, and will, I hope, produce a discussion.

In 1894 Fourier wrote on *Les Affections Parasyphilitiques*, including locomotor ataxia, dementia paralytica, certain types of epilepsy, and (Osler adds) arteriosclerosis. Fournier held that these affections are not exclusively and necessarily caused by syphilis, and that they are not influenced by specific treatment. About

the same time Drummond boldly stated that all cases of general paralysis of the insane and aneurism were due to syphilis; and I think it is now almost universally admitted that syphilis is a necessary antecedent of general paralysis of the insane.

Certainly when we meet with a difficult case for diagnosis we become very positive when we receive a report from the laboratory to the effect that the blood of the previously dubious case gives a positive Wassermann. Moreover, Noguchi and others have demonstrated the spirochæte in brains of persons dying of general paralysis of the insane.

Perhaps the greatest difficulty still exists in determining whether a case is one of general paralysis of the insane or cerebellar tumour, as both may give a positive Wassermann, and the "titubating gait" may be simulated in general paralysis of the insane; but, of course, if the tumour is in the middle lobe and rapidly growing very distinctive, symptoms soon appear.

Here are some conundrums which have puzzled all of us, and have recently been embodied by Pierce, and I wish here to acknowledge my great indebtedness to him for many striking articles in *The Medical Annual*:

(1) How is it that careful treatment by mercury during the acute stage of syphilis does not prevent general paralysis of the insane developing later?"

The cynic will reply that the administration of Hg. has not been sufficiently prolonged in these cases, and that it should be given systematically for a year at least.

(2) "Why are ordinary tertiary symptoms of syphilis rare in general paralysis of the insane?"

We have one case at present under our care, "E. T—," who has tertiary skin lesions on his scalp and extremities, which lesions appear to improve a little under Donovan and Fowler solutions, but they never completely heal up. He is the only case of general paralysis of the insane presenting tertiary lesions of syphilis that I have seen.

Marie and Lævaditi were impressed with the number of cases presenting very mild primary symptoms of syphilis who afterwards became paralytic, and also by the absence of tertiary syphilitic lesions met with in general paralysis of the insane. They proceeded to experiment on rabbits and apes. Blood from a general paralytic was injected into the scrotum of a rabbit, and in one case cutaneous lesions containing spirochætes were produced. The effects of this virus on rabbits were compared with those of Truffi's virus, and the following differences were noted:

(*a*) The incubation period was longer in case of the virus of general paralysis of the insane.

(*b*) The lesions were more superficial, scaly, and not indurated.

(*c*) The treponema showed a preference for the superficial layers of the skin. If, says Pierce, "it is demonstrated that the primary lesion is a specific superficial cutaneous lesion it shows that general paralysis may be transmitted by contact much more easily than ordinary syphilis, the special organism of which is said to lie in the deeper layer of the skin."

If these experiments are confirmed they will clear up many of the problems connected with general paralysis, and they naturally raise the question whether the treponema of general paralysis is biologically the same as that found in syphilis.

They suggest that general paralysis is due to a special variety of the *Treponema pallidum* possessing special affinity for the nervous system.

(3) The third conundrum is how to explain "remissions" in general paralysis. Mott points out that the multiplication of spirochætes leads to the production of toxins which cause the meningo-encephalitis, and subsequent necrosis of nervous elements.

No doubt, he says, anti-bodies are produced to which may be attributed the remarkable remissions of general paralysis.

I now approach, "oculis defictis," the recent modes of treatment of general paralysis.

When salvarsan was first exploited the wife of one of our general paralytics sent me a cutting from a Scotch newspaper headed "Universal Cure for Insanity!" A few days afterwards I received another from the same source with the heading amended to "Cure for General Paralysis"! Naturally I wrote to the distinguished

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doctor, whose report had fulminated the brain-pan of the editor of the daily newspaper, asking him to kindly give me some details of the successful treatment of general paralysis by salvarsan. The following day he replied that he could only say "that some cases of general paralysis had appeared to benefit by its administration."

He had no reason to thank his editorial friend, and he might well exclaim "Stands Sauchiehall Street where it did"!

As regards treatment, Mott states that neither mercury nor antimony can pass from the blood into the cerebro-spinal fluid, and he doubts whether the introduction of salvarsan serum by lumbar puncture will be found of value.

Erlich himself suggested that the molecule of salvarsan is probably too large to pass through endothelial membranes.

Myerson reports on 7 cases treated by salvarsanised serum. In 4 cases there was some clinical improvement. In the remaining 3 there was no improvement.

Marie and Levaditi report on 12 cases of general paralysis treated intra-meningeally with "salvarsanised serum." A rabbit is injected intravenously with salvarsan; an hour later the blood is withdrawn and the serum decanted. The skull of the general paralytic is trephined in the anterior temporal region on each side, and 5 c.c. of the serum introduced beneath the dura. The serum is injected slowly on both sides and directed at first forwards and afterwards towards the parietal region.

What the authors call severe reaction then set in within a few hours—fever, vomiting, partial convulsions, and katatonic states.

However, they cheerfully remark that these symptoms quickly cleared up, and decided improvement followed. In all 12 cases there was marked benefit, but they clearly state that it is too early to say if the improvement is permanent.

In the *Lancet* of January 24th, 1914, Dr. W. d'Este Emery records good results in 3 cases, 1 of general paralysis of the insane and 2 of tabes, by following the method of Swift, who injects the curative material directly into the cerebro-spinal fluid by lumbar puncture.

The curative material, in Swift's opinion, consists of anti-bodies which circulate in the blood after an injection of salvarsan. He gives an injection of that drug or neo-salvarsan, waits for an hour, bleeds the patient, allows the blood to clot, collects the serum, and injects it, after heating it to 60° C. to destroy the complement, and diluting it with normal saline solution, into the spinal canal.

Emery's criticism on this theory is that it seems quite impossible for large amounts of antibodies to be developed in so short a time.

I may be allowed to add a few words on treatment in "congestive attacks."

(1) We have found that "hexamine" or "urotropine," as it was first called, seems to help in warding off these attacks.

It is of course largely used as a genito-urinary antiseptic, and it is excreted as formaldehyde by the kidneys, but it is also found in the cerebro-spinal fluid.

Eruckar (*Practitioner*, April, 1916), points out that this drug is of no use when the urine is alkaline, and as the cerebro-spinal fluid is alkaline it cannot exert any antiseptic action there, and consequently its ameliorative action in general paralysis of the insane is "wrop in mystery."

(2) The inunction of mercurial ointment with the administration of calomel sublingually appeared to save the life of a case, G. P—, under our care, who lay unconscious or semi-conscious for a week.

This man was the exception to the rule I have laid down that general paralysis of the insane cases are not benefited by antisyphilitic treatment.

(3) In another case, A. P—, a congestive attack started with an alarming hyperpyrexia, 108° F. I put him in a sitsbath and poured cold water over him. His temperature fell to 102° F. He regained consciousness, and lived for 11 years afterwards.

The late Dr. Courtenay always held that this was not a case of general paralysis of the insane at all, but he did not suggest any alternative diagnosis.

In the May number of *The Practitioner* of this year McGrigor reports on no less than 2,000 cases of ordinary syphilis, and he has had very good results by the intravenous injection of concentrated solutions of the following arsenical preparations, *viz.*, salvarsan, neosalvarsan, kharsivan and neo-kharsivan. They are all scar healers, as Erlich originally claimed for his "606."

Undoubtedly the treatment of syphilis has progressed greatly, but the treatment of general paralysis of the insane by salvarsan and neosalvarsan either intravenously or intrathecally has not met with any measure of success.

The toxicity of salvarsan is well known, and some authorities think that it is impossible on account of this toxicity to give a sufficiently large dose to kill the spirochætes in general paralysis of the insane.

However, Mott states that in one case in which very large doses of salvarsan were administered, the spirochætes found in the brain *post-mortem* were exceptionally numerous.

Salvarsan to be fatal to the spirochætes must come in contact with them, and it is very doubtful if it can pass through the choroid plexus into the cerebro-spinal fluid. I fear we cannot place much reliance on the new methods attempted in the treatment of general paralysis of the insane.

Some of these methods (as described earlier in this paper) approach the heroic, but they are certainly justifiable in dealing with an otherwise inexorably fatal disease.

In conclusion, it seems to me that prophylaxis is the only hope, believing as I do that syphilis is a necessary antecedent of general paralysis of the insane. The public are now becoming painfully aware of the horrible ravages of syphilis—especially awful when transmitted to innocent women and children—and in our lifetime the public will demand compulsory notification and compulsory treatment of syphilitics.

The resulting diminution in the number of cases of syphilis will show a corresponding fall in the number of general paralysis of the insane.

The CHAIRMAN said they had all listened with great interest to the valuable communication of Dr. Eustace introducing the discussion. He felt sure that the many points raised by Dr. Eustace as regards the causation and treatment of the disease would be of great interest to all present.

A lengthy discussion then followed upon all of the points referred to in the consideration of the causation, progress, and treatment of general paralysis by salvarsan and salvarsanised serum. It was the general feeling that much disappointment was felt that the results of these modern treatments was not more satisfactory. Salvarsan did more harm that good in many cases, and at most seemed only to render the acute symptoms more easily managed, but failed to markedly influence the degenerative tendency of the disease.

Dr. REDINGTON mentioned treatment by injection in 6 cases by a drug known as "arsesiton"; of these 6 cases 4 died; in the other 2 cases no marked amelioration recurred.

Dr. RAINSFORD spoke of his experience of urotropine, which was favourable, and this drug appeared by the experience of all the Members who had used it as a valuable remedy in preventing secondary infective toxæmias thereby lessening the number of seizures, and generally improving the condition of general paralytics in the later stages of the disease.

Major DAWSON spoke of the danger of administering salvarsan in advanced cases of the disease. From the work done he was led to hope that in the future a cure might yet be found for this hitherto intractable malady. Ordinary mercurial treatment was both useless and injurious. It was remarkable how few general paralytics were found in Irish Asylums. In Limerick there had not been a case for nine years, and Dr. Drapes and others present had almost a similar experience. There seems little or no doubt that this is wholly due to the fact that in most Irish Asylums (those for City populations excepted, such as Dublin, Belfast, and Cork), the large majority of the patients belong to the agricultural class, amongst whom syphilis is a comparatively rare disease.

Others having discussed the many points of interest, the CHAIRMAN said they all owed a debt of gratitude to Dr. Eustace for introducing so ably the discussion which was so freely engaged in. It was to be hoped that with the recent endeavour of the nation to stamp out or control the spread of venereal disease a diminution by the number of cases of general paralysis would occur, and as the treatment of this disease by even the most modern methods had proved disappointing the hope for the future lay in prophylaxis.

It was decided to hold the Spring Meeting of the Division at the Richmond Asylum, by the kind invitation of Dr. J. O'C. Donelan.

Dr. J. O'C. Donelan kindly promised to read a short paper on his "Experiences of a War Hospital" at this meeting.

As the discussion at the present meeting had been so interesting and instructive, it was decided that at the next Autumn Meeting of the Division the subject of "The Alimentary System in Connection with Insanity" should be considered by the Members.

This terminated the proceedings.

SCOTTISH DIVISION.

A MEETING of the Scottish Division of the Medico-Psychological Association was held in the Royal College of Physicians, Queen Street, on Friday, November 17th, 1916.

Present: Drs. Easterbrook, Hotchkis, Carlyle Johnstone, Kerr, T. C. Mackenzie, G. M. Robertson, Ford Robertson, Maxwell Ross, and R. B. Campbell, Divisional Secretary.

Dr. G. M. Robertson occupied the chair.

Before taking up the ordinary business of the meeting the Chairman referred to the recent resignation of Dr. R. B. Mitchell from the Medical Superintendentship of the Midlothian and Peebles District Asylum, and he considered that such an event should not pass without the Division recognising the long and valuable services which Dr. Mitchell had rendered in the interests of lunacy, and at the same time expressing the hope that he would be long spared to enjoy his well-earned retirement. Dr. Carlyle Johnstone, in kindly terms of appreciation, associated himself with the Chairman's remarks. It was unanimously resolved that the Secretary be instructed to send an excerpt of the Minutes to Dr. Mitchell.

The CHAIRMAN stated that since coming to the meeting he had heard of Dr. Turnbull's serious illness, and the members present expressed their great regret to hear such grave news regarding him.

The minutes of the last divisional meeting were read and approved, and the Chairman was authorised to sign them.

Apologies were intimated from Lieut.-Col. Thomson, President of the Association, Drs. Yellowlees, Oswald, McRae, Alexander, Ferguson Watson, and Crichlow.

The Business Committee was appointed, consisting of the nominated member, and the two representative members of the Council, along with Drs. Carlyle Johnstone, Maxwell Ross, and the Divisional Secretary.

Drs. C. C. Easterbrook and L. R. Oswald were nominated by the Division for the position of representative members of Council, and Dr. R. B. Campbell was nominated for the position of Divisional Secretary.

The following two candidates after ballot were admitted to membership of the Association:

(1) Albert Victor McMaster, B.A., M.R.C.S,Eng., Senior Assistant Medical Officer, Fife and Kinross District Asylum. (Proposed by Drs. Ross, Skeen, and Campbell.)

(2) Percy Chisholm, L.R.C.P. & S. Edin., Assistant Medical Officer, Stirling District Asylum, Larbert. (Proposed by Drs. Campbell, Clarkson, and Keay.)

Dr. EASTERBROOK, in the absence of Dr. Cruickshank, read interesting communications by him on:

(1) The Relative Amounts of Grey and White Matter in some Normal and Pathological Brains.

(2) The Water Content of some Normal and Pathological Brains.

Dr. FORD ROBERTSON read a most instructive and interesting paper on "Chronic Infections by the Bacillus of Influenza, and their Importance as Causes of Nervous Disorders."

Dr. MAXWELL ROSS reported an interesting case of "Cyst in the Third Ventricle."[1]

A vote of thanks to the Chairman for presiding concluded the business of the meeting.

No dinner was held after the meeting.

[1] All the papers read at the meeting are published in the current issue of the Journal.