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Edited by

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VOLUME I

VOLUMES IN THE SERIES

Vol. I. **Neurology**

Vol. II. **Neurological Surgery and Neuroradiology**

Vol. III. **Electro-Encephalography, Neurophysiology and Epilepsy**

Vol. IV. **Neuropathology**

Vol. V. **Joint Proceedings of the Conference and Neurology at the Cross Roads**

ERRATA

Volume III. Electroencephalography, Clinical Neurophysiology and Epilepsy, page 468. The authors of this paper should read - W. Gotze, A. Kofes and St. Kubicki, Berlin, Germany and not H. Jacob, Hamburg, Germany.

Volume V. Joint Meetings and Round Table Conference, page 127. The author of this paper should read - W. J. C. Verhaart, Leiden, The Netherlands and not M. Minkowski, Zürich, Switzerland.

PREFACE

It was possible to publish the complete texts of the reports, concerning the invited discussions, before the opening of the First International Congress of Neurological Sciences, by reason of a subsidy from the National Institute of Neurological Diseases and Blindness. They were distributed to registered members of the Congress. A certain number of copies were obtained after the Congress by members or experts who were not subscribers, on application to the publishers, the Acta Medica Belgica.

The résumés of all communications presented and received before the 15th May 1957 were published before the Congress and edited by Excerpta Medica. Each member received those relating to the subject for which he was registered. A certain number of copies concerning other subjects were obtained by those requiring them from our publishers, during and after the sessions.

During the administrative sessions which were held on the closing day of the First International Congress of Neurological Sciences, we were commissioned by the organisers of the various sections to publish the complete texts of communications concerning the topics and open communications, those discussions and communications received late, and those discussions not yet published.

We have added to this the complete reports and discussions of the special session organised on the opening day of the Congress by the International League against Epilepsy, the résumés of which were not published in those papers circulated in advance by Excerpta Medica. These documents have been included in the volume of the Fourth International Congress of Electroencephalography and Clinical Neurophysiology.

The original texts of the Round Table Conference, under the auspices of the C.I.O.M.S. and the Congress, dedicated to the problem of the Future of Neurology, and entitled 'Neurology at the Crossroads', the speeches delivered at the official opening session in the presence of His Majesty the King, those given at Louvain at the Centenary Celebration of Arthur Van Gehuchten and those at the Congress Banquet have been inserted in Volume V entitled 'Joint Meetings'.

An appeal was sent a few days after the Congress to all authors of reports or discussions. Many of them sent us modified or revised texts or supplementary figures. Some did not reply at all. We are publishing the texts which were received.

Many texts were written by their authors in a language other than their mother or habitual tongue. This is a obligation inherent in Congresses such as ours.

On the other hand, the medical editors complain more and more of a lowering standard of literary expression and a lack of grammatical care in the papers received. In order that the quality and intelligibility of our publication should be maintained we have often been obliged to modify the

texts submitted or to translate them into one of the three languages used at the Congress. We have only made those changes which were indispensable, being more concerned with retaining the exact thought of the writer rather than giving impeccable literary style. This was an additional source of work and caused an unforeseen delay to this supplementary publication. This is also the reason for not having been able to submit the proofs to the authors, nor send for those figures mentioned in the texts and not enclosed, or the missing bibliographies. This would have delayed publication for several years and, in view of the rapid development in the various subjects, would have affected their pertinence and significance.

We have done our best not to depart from the author's original ideas. If we have not always succeeded we ask you to excuse us.

We should like to thank Captain Maxwell and all those connected with Pergamon Press Ltd., for their work and time without which even an attempt at publication could not have been considered. We wish in particular to thank Miss M. Fleming for her valuable assistance in helping with the completion of this task.

Ludo van Bogaert
Joseph Radermecker

Editors

PREFACE

Les textes complets des Rapports, ceux des Discussions sur Invitation avaient pu être publiés avant le début du Premier Congrès International des Sciences Neurologiques grâce à un subside du National Institute of Neurological Diseases and Blindness. Ils furent distribués aux membres régulièrement inscrits au Congrès. Un certain nombre d'exemplaires ont été obtenus après le Congrès par les interessés non inscrits, sur demande auprès de nos Editeurs, les Acta Medica Belgica.

Les résumés de toutes les communications présentées et recues avant le 15 Mai 1957 avaient été publiés avant le Congrès dans les fascicules édités par Excerpta Medica. Chaque membre les a reçus pour la discipline où il était inscrit. Un certain nombre d'exemplaires concernant d'autres disciplines ont été obtenus par ceux qui le désiraient auprès de ces Editeurs, pendant et après les Sessions.

Lors des séances administratives qui ont eu lieu le jour de la clôture du 1er Congrès International des Sciences Neurologiques, les Bureaux des différentes disciplines nous ont confié la tâche de réaliser la publication des textes complets des communications concernant les thèmes et des communications libres, ceux des discussions et communications reçues trop tard, ceux des discussions non encore publiées.

Nous y avons ajouté les Rapports complets et les discussions de la Séance spéciale organisée le jour de l'ouverture du Congrès par la Ligue Internationale contre l'Epilepsie, rapports dont les résumés n'ont pas été publiés dans les fascicules précirculants des Excerpta. Ces documents sont insérés dans le volume du IVe Congrès International d'Electroencéphalographie et de Neurophysiologie clinique.

Les textes originaux de la Conférence de table ronde consacrée, sous les auspices du C.I.O.M.S. et du Congrès, au problème de l'Avenir de la Neurologie, les allocutions de la Séance Solennelle d'Ouverture en présence de Sa Majesté le Roi, celles prononcées à Louvain lors de la Célébration du Centenaire d'Arthur Van Gehuchten et au Banquet du Congrès sont insérés dans le volume V consacré aux 'Journées Communes'.

Un appel avait été envoyé au lendemain du Congrès à tous les auteurs de rapports et de discussions. Beaucoup d'entre eux ont envoyé des textes remaniés ou augmentés avec des figures supplémentaires. D'autres n'ont pas répondu. Nous publions ce que nous avons reçu.

Beaucoup de textes ont été rédigés par leurs auteurs dans une langue qui n'était pas leur langue maternelle ou leur langue véhiculaire habituelle. C'est là une servitude inhérente à des Congrès comme les nôtres.

D'autre part, les éditeurs médicaux se plaignent de plus en plus d'une baisse dans la pertinence de l'expression littéraire et dans le souci grammatical des travaux reçus. Pour conserver à la publication que nous avions entreprise une certaine qualité et surtout une intelligibilité

suffisante nous avons été obligés souvent de remanier les textes soumis ou de les faire traduire dans une des trois langues véhiculaires principales de nos Congrès. Nous n'y avons introduit que les changements indispensables, plus soucieux de ne pas altérer la pensée exacte des des auteurs que d'apporter un texte linguistiquement impeccable. Ce fut une source de travail supplémentaire et l'origine d'un délai imprévu dans la réalisation de cette publication complémentaire. C'est aussi la raison pour laquelle nous n'avons pas pu soumettre aux auteurs les épreuves de leur contribution, ni réclamer les figures annoncées dans le texte et non envoyées ou les bibliographies manquantes. Ceci eut remis la parution à plusieurs années et aurait - en raison de l'évolution rapide de nos disciplines - enlevé à beaucoup de travaux leur actualité et, de ce chef, leur portée.

Nous avons fait de notre mieux pour ne pas trahir la pensée des auteurs. Qu'ils nous excusent si nous l'avons fait.

Nous tenons à remercier le Capitaine Maxwell et le personnel d'édition de Pergamon Press à tous les degrés de la hiérarchie du sacrifice inconditionnel qu'ils nous ont consenti de leur travail et de leur temps, sacrifice sans lequel la tentative même de cette publication ne pouvait etre envisagée. Nous tenons à remercier tout spécialement à cette Miss M. Fleming de son aide si précieuse.

Ludo van Bogaert
Joseph Radermecker

Editeurs

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DISCUSSION OF DR. McALPINE'S PAPER

DISCUSSION DU RAPPORT DU DR. McALPINE

R. MÜLLER
Stockholm, Sweden

In the discussion on the significance of genetic factors in multiple sclerosis, reports on the familial incidence of the disease, i.e. its appearance in more than one member of a family, have a very limited value. It is, for instance, impossible to determine whether this is higher than would be expected by chance. Hence, the order of the incidence is dependent, for one thing, upon which groups of relatives are investigated.

The point of departure for the discussion should instead be the question of whether the incidence of multiple sclerosis in the relatives of the affected persons is significantly higher than that in the general population. According to Dr. McAlpine available data would seem to indicate that this is so. There are, however, several sources of error which result in a raised morbidity rate in the relatives.

Firstly, the procedures for determining the morbidity rate in the relatives and in the general population have not been the same. In the latter, general practitioners and hospitals within the survey area have been asked for the names and addresses of cases under their care in which a diagnosis of multiple sclerosis has been made or suspected. Although this is the most reliable of the hitherto published methods, it does not exclude the possibility that some cases may be missed and consequently would give a lower frequence than actually occurs.

The incidence of the disease in the relatives has been obtained by interviews with the probands. Since it may be assumed that the latter have been well aware of the health of their near relatives (parents, siblings and children) and, if this was not the case, the investigator has had the opportunity of directly contacting the relatives, the error of this method would be smaller than in the former case, and the morbidity rate obtained will therefore be more exact.

Secondly, the age distribution in the population consisting of the relatives differs from that in the general population. The average age of the relatives is higher and therefore the risk that they may have acquired the disease is greater. Consequently, in order to be able to make a correct comparison between the two populations it is necessary to know the prevalence rate of the disease in the different age groups which, however, is not known. Allowance can be made for this by appropriate weighting for age, but this procedure has not been employed.

An important point stressed by Dr. McAlpine is that the incidence of the disease in relatives to be comparable with that in the general population, should be calculated on the living relatives. In the published reports, however, the calculations have been made on the total number of affected relatives. Since the mortality rate is considerably higher in multiple sclerosis than in the general population this would give too high an incidence in the relatives. This forms the third source of error.

Fourthly, the difficulty of distinguishing between familial multiple sclerosis and the hereditary forms of ataxia and paraplegia may be assumed to contribute to the raised incidence of the disease in the relatives.

In view of these facts it cannot be stated with certainty that the incidence of multiple sclerosis in the relatives of the affected persons is significantly higher than that in the general population. If, however, we presume that this is the case, the difference must in reality be considerably smaller than that, in itself insignificant figure of highest one per cent reported in the literature.

To what then can such a difference be due? Two hypothesis may be advanced. The increased morbidity rate in the relatives may be due to environmental or to genetic factors. Let us consider the latter first.

As seen in Dr. McAlpine's first table, the incidence of multiple sclerosis differs in the three generations examined (parents, siblings and children). This fact does not support the theory of a monohybrid dominant transmission. If one accepts the concept of a dominant transmission, the low morbidity rate in the relatives presupposes a diminished degree of manifestation, less than 5 per cent.

Dr. McAlpine considers that there is evidence of an increased incidence of parental consanguinity in multiple sclerosis. He finds here a support for the theory of genetic factors. The investigations to which he refers, however, lack reliable control figures for the incidence of consanguineous marriages in the general population. In Sweden, where such data are available (Böök, Sjögren and Larsson and Sjögren) it has not been possible to demonstrate an increased incidence of parental consanguinity in multiple sclerosis (Müller). This is not, however, an argument against the theory of a recessive transmission. It is true that multiple sclerosis is a rare disease, but it is not so uncommon that an increased incidence of consanguineous marriage is to be expected. For multiple sclerosis to be regarded as a recessively determined disorder a low degree of manifestation must be assumed, less than 10 per cent, as well as significantly degrees of manifestation in different categories of relatives.

Such a high degree of inhibition as would have to be assumed in the case of monohybrid transmission is difficult to accept. For this and other reasons presented here a monohybrid transmission seems hardly likely.

The low morbidity risk for the various categories of relatives is compatible with the theory of multifactorial transmission. The mode of transmission cannot, however, be determined with any degree of certainty since it is difficult to distinguish between the influences of polygenic and environmental factors.

If one accepts the hypothesis that genetic factors are generally operative in the development of multiple sclerosis it can only be with the important reservation that they play a decidedly subordinate role.

The increased morbidity rate in the relatives may also be ascribable to environmental factors. It is conceivable that these are unevenly distributed in the population. Examples of such factors are infectious agents and composition of the diet. The increased morbidity rate could then be due to the fact that the incidence of the disease in the relatives was calculated in relation to the incidence in the general population instead of, as would be correct, in relation to the incidence in the population exposed to the environmental factors in question. This hypothesis is supported by the studies of Sällström in Sweden, Sutherland in Northern Scotland and Hyllestad in Denmark who found evidence suggestive of a local distribution of the disease.

It is also possible that the disorder which on the basis of clinical and histological findings is designated multiple sclerosis can be produced in more than one way. In rare cases it might be a question of a hereditary disease with monohybrid recessive transmission.

In summarizing, I would point out that it cannot be considered proved that the incidence of multiple sclerosis is higher in the relatives of affected persons than in the general population. Even if this is presumed to be the case, the difference is insignificant and does not permit any definite conclusions regarding the presence of genetic factors.

DISCUSSION DE LA SCLEROSE EN PLAQUES ET DES MALADIES DEMYELISANTES

DISCUSSION ON MULTIPLE SCLEROSIS AND DEMYELINATING DISEASES

B. RODRIGUEZ-ARIAS
Barcelona, Spain

Nous avons étudié les différents et importants problèmes, suscités par le diagnostic et l'assistance de tout malade polysclérotique, dans la zone septentrionale du littoral méditerranéen espagnol. L'examen et la comparaison des histoires cliniques personnelles nous ont fait déduire quelques conclusions précieuses.

L'incidence de cette affection démyelinisante est plutôt limitée en Espagne. Les chiffres absolus de morbidité et mortalité sont bas et n'impressionnent pas; même le pourcentage faisant référence au nombre total de patients assistés dans un service spécialisé, tel que l' 'Instituto Neurológico', n'est pas important. Nos statistiques signalent à peu près un 4 à 5%.

Or, nous avons découvert qu'un nombre plus grand de polysclérotiques provient de la province de Tarragone que des contrées ou régions voisines (Catalogne, Aragon, Valence et Baléares). Nous ne savons a quel facteur attribuer cette dissimilitude géographique, car les conditions alimentaires, climatiques et de configuration du sol, ainsi que le régime fluvial, y sont à peu près les mêmes.

Nous croyons qu'il ne faut pas confondre - dans un sens substantiel - avec la sclérose multiple, une grande recrudescence d'encéphalomyélites disséminées aiguës spontanées, très probablement virales, observées par nous dès 1940, d'un caractère épidémique d'abord, et endémique ensuite, qui n'est pas encore éteinte (1957). Seulement une proportion réduite d'encéphalomyélitiques aigus ont présenté - avec le temps - la symptomatologie classique décrite par Charcot. Presque tous guérirent et seulement quelques-uns ont été victimes de séquelles strictement motrices. La diète d' 'insuffisance alimentaire', dont certains contingents de population ont souffert pendant notre après-guerre civile, n'a eu aucune influence sur l'accroissement de la sclérose en plaques. Nous avons observé, par contre, un redoublement prononcé dans la fréquence des neuroinfections virales, ainsi que des accidents nerveux causés par des pratiques immunologiques, actives et passives, et spécialement par la vaccination antirabique. Nous avons observé aussi le développement du lathyrisme, et même la révélation de tableaux d'avitaminose, complexes et très particuliers, détaillés par les internistes et neurologues de