which one does hear expressed are far more frequently for the careless omission or neglected opportunity which led to their apprehension and consequent conviction.

Finally, to return to the first offender, I do not think that any intelligent person could possibly imagine that his prison environment could have the effect of unhinging his mind. Of course, given an individual with a strong hereditary tendency to insanity, the effect of the disgrace attendant upon his position might be a predisposing cause of mental disorder; but I contend that a man of normally constituted mind is not more than normally depressed by his position, and that only at the commencement of his sentence, and by the prison discipline his mind is sufficiently diverted from any groove which might, so to speak, disturb the normal swing of his mental pendulum.

The Relation of Acquired Syphilis to Insanity. A Critical Digest. By W. R. DAWSON, M.D. (Dub.), L.R.C.P.I.; Assistant Medical Superintendent, Farnham House Asylum, Dublin.

MODERN opinion as to the nature of syphilis regards it as an exanthematous fever, with a period of incubation, a stage of efflorescence, and an epoch of sequelæ, and in fact diverging in no essential from the type of its class save in its more protracted course, by which peculiarity all other seeming variations can be explained. If the periods of incubation and efflorescence be taken as one, each stage of the disease may be said to have its own characteristic nervous phenomena, including psychoses; and this fact may serve as a basis for the classification of the syphilitic insanities.

Owing to the comparative chronicity of the active period of syphilis, the occurrence of nervous, and above all of mental, phenomena at this stage depends to a far greater degree than in other exanthemata upon predisposition, whether hereditary or acquired. While the majority pass through the disease without showing nervous symptoms, others suffer from them to a greater or less extent, and in a few the mind gives way. As might be expected, the amount of anatomical evidence collected as to the affection of nervous structures by the syphilitic virus is comparatively small, since but few die at this stage, and the specific nature of the lesions cannot at present be proved in all cases. However, implication of the

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nervous centres is indicated by the retinitis which is not very uncommon, and the vessels of the brain doubtless share in the universal arteritis and disease of capillaries which may be present; Jürgens has described a simple acute encephalitis, involving the entire brain and producing softening; and softening of the cord, apparently due to vascular disease, has been noted. Cases are also on record (Brasch, Atelekoff, &c.) of disease of the cerebral vessels beginning as early as two or three months after the primary infection, and in their appearance and results strongly resembling tertiary phenomena. They differ from the latter, however, in being refractory to specific treatment, and Neisser considers that such lesions are not really instances of "*tertiarismus præcox,*" but rather analogous to the secondary cutaneous phenomena, —being, in fact, "'papular' lesions situated in the cerebral vessels." In Atelekoff's case there was also hyperæmia of the brain and membranes, and slight cloudiness of the pia near the vessels. A yellow exudation in the brain and membranes met with in one case (Lancereaux) may, not unlikely, have been an early tertiary phenomenon.

There seems, however, to be a very general consensus of opinion, based chiefly on clinical observation, as to the existence of more or less transitory hyperæmic and inflammatory conditions of the brain and its membranes at this period. Prior to, accompanying, or succeeding the appearance of the rash there may be general uneasiness, lassitude, vague pains, restlessness, melancholy, and moroseness, all probably due to the cachexy of the period. But in addition the tendon and skin reflexes are early increased, and this with the insomnia, headache, sensory disorders (including vertigo and deafness), and neuralgic (neuritic ?) pains, would seem to indicate some degree of hyperæmia and inflammation such as above referred to. Various paralyses, and also convulsions, which have been described, seem to point in the same direction. These phenomena are, of course, all within the bounds of technical sanity; but they indicate nervous lesions which would be likely to combine with worry and other moral causes to produce some form of psychosis analogous to the delirium of other fevers, or to *mania a potu.* The rarity of such an occurrence must again be set down to the chronicity of the disease.

Still there is evidence that such cases are occasionally met with. Griesinger is referred to as stating that in cases of predisposition, hereditary or acquired, sudden attacks of

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delirium or wild mania may occur as early as the second week after infection, before or with the first secondary symptoms. Wille has stated positively that mental disease may supervene from two weeks to two months after syphilitic infection, certainly with the first secondaries, which, however, it may precede. He appears to have ascribed the attacks partly to anæmia, and partly to meningitis and cerebritis. Mickle doubted the specific nature of these early cases, though admitting that in some few the virus may act directly in the production of insanity, and that there may be early mental disease due to the other nervous symptoms, such as insomnia, headache, &c. Savage, however, says that "syphilitic fever may be associated with delirium, and this may form the starting-point of a maniacal attack," but does not remember having seen such a case, the more usual form of psychosis being a stuporose or suspicious melancholy, or mental weakness, due to cachexia. Hyslop is of opinion that early syphilitic insanity most commonly takes the form of mania, melancholia, or alternation, but may be of an "ordinary idiopathic type;" and that many cases recover on disappearance of the bodily symptoms. In Atelekoff's case, alluded to above, in which both vascular and meningeal lesions occurred, the mental symptoms were depression and irritation, followed by a stage of exaltation, and finally extreme confusion and apathy. Thus both classes of symptoms were also present.

In this country cases have been published by Cadell, Mickle, J. B. Brown, J. Hutchinson, and Clouston, which have a greater or less bearing on the point. Cadell's case, and perhaps that of Clouston, seem to have been genuine examples of the mania of early syphilis; the rest are not convincing. Wiglesworth has published a fatal case of progressive dementia such as Savage describes.

The difficulties arising from the extreme rarity of this form of mental disease are increased by the existence of three sources of fallacy: 1st, the possibility of coincident insanity unconnected with the syphilis; 2nd, the fact that tertiary phenomena may encroach on the secondary period; and 3rd, that, in the opinion of many, tertiary nervous disease is most apt to occur in cases in which the secondary manifestations have been transient and insignificant. Still it is probably, upon the whole, safe to affirm the existence, first, of a very rare early syphilitic delirium or mania, chiefly due to toxic inflammatory conditions of the brain and its membranes; and

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secondly, of a commoner but still rare asthenic melancholic psychosis, dependent on general (and perhaps local) anæmia and malnutrition. But actual scientific demonstration awaits the discovery of the organism of syphilis.

There are, however, no such difficulties with regard to the insanity of the tertiary period, the number of cases of which, described clinically and anatomically, is very large, while the lesions are usually characteristic. Tertiary syphilitic disease of the central nervous system is stated to occur as early as the fifth month, and as late as the twenty-sixth year, after infection, but to be most frequent from the third to the tenth year. The insanity to which such disease gives rise is characterised by the same irregular polymorphism, whether as regards symptoms, course, duration, or termination, which is seen both in the other nervous phenomena and in the anatomical lesions. This polymorphism renders it extremely difficult to form any classification of the varieties which shall be even approximately adequate. One on the lines of Oppenheim's arrangement, however, which has the advantage of being based on the anatomical lesions, seems, upon the whole, useful and sensible; but neither it nor any other system can pretend to include in its divisions all the varieties of psychosis dependent on a disease whose distinguishing feature is the chaotic irregularity with which the phenomena are mixed. Neither on the physical nor on the psychical side are the groupings separated by any hard and fast line.

The characteristic lesion of the tertiary period is, here as elsewhere, the development of gummatous tissue in the connective elements of the organs, and consequently occurs, for the most part, where connective tissue is most abundantly found, viz. in the meninges and in or around the blood-vessels.* In a certain number of cases the disease occupies the convexity of the brain chiefly or entirely, in others the base and blood-vessels, and in a few the vessels only; and the symptoms, physical and mental, vary accordingly, the latter being naturally best marked in disease of the convexity. In this situation the morbid process may start in the bone, the dura mater, or the pia-arachnoid, but in any case all the meninges are liable to be ultimately involved. Here as elsewhere there may be merely one or more small discrete nodules, or an extensive mass of gummatous tissue may form, the favourite seat of disease being the area of the

* The following account of the tertiary phenomena is mainly an adaptation of the description in Oppenheim's excellent monograph (see reference at end).

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frontal and parietal lobes. The cortex may be merely compressed, and may show no changes even under the microscope; but if the pia-arachnoid is involved the growth penetrates into the cerebral tissue, causing an inflammation of all its elements; softening, partly inflammatory and partly the result of interference with the pial blood-supply; or a simple atrophy due, no doubt, to pressure, faulty nutrition, and defective elimination of waste products. Sclerosis is a less common result. The vessels in the affected area show the ordinary syphilitic changes, but in addition hyaline degeneration has been observed.

A quick-growing syphiloma, even of comparatively small size, in this situation, is liable to give rise to general epileptic convulsions, sometimes associated with wild maniacal excitement. In less acute cases, where there is a succession of epileptic seizures for a sufficient length of time, the ordinary varieties of epileptic insanity may supervene. Here, however, the mental symptoms are due to the epilepsy, independently of its origin. But it is laid down as a general rule that, in most of the cases in which mental disturbance is a leading feature, the disease is found to extend over a large part of the brain, or the process on the convexity is combined with similar lesions at the base, or with disease of the vessels. The course of such cases is usually chronic, the chief feature being a dementia, of any degree of severity, with apathy, moroseness, irritability, and confusion, and occasional fits of excitement. Hallucinations (to be explained by the actual sensory impairments) and transient delusions may also be present, but delusions of grandeur are said to be uncommon. In some of the cases there is a very close resemblance to general paralysis, and it will be remembered that the part of the cerebral cortex chiefly affected is apt to be the same in both diseases.

When the disease is situated at the base of the brain the pia-arachnoid is its usual site, but owing to the anatomical relations of this structure the vessels and nerves rarely escape, while the cerebral substance is frequently invaded; and it is impossible to separate the symptoms of basal gumma from those due to vascular lesions. As distinguished from disease of the convexity, there is an absence of focal phenomena, the mental symptoms being of the type met with when the intra-cranial pressure is from any cause increased, but usually with the addition of those arising from disease of the vessels. Thus there may be impairment of intelligence,

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amnesia, hebetude, occasionally passing into somnolence or even coma, or varied by fits of wild excitement, with or without hallucinations. The fits of excitement probably sometimes follow or replace epileptic seizures, which are not uncommon (owing most likely to vascular lesions), though they have not the persistent and progressive character of those due to disease of the convexity. Intervals of comparative sanity also occur at times, but may not be so complete as they appear.

The syphilomatous growth in any situation of course involves the vessels within its area, either by mere pressure or actual invasion of their walls, the latter being often accompanied by proliferation of the intima. But the disease may attack the vessels independently, in which case it may take one of three forms: a gummatous arteritis or periarteritis, with or without disease of the intima; an endarteritis, affecting the wall within the internal elastic lamina; or a peri- and mesarteritis, the intima being sometimes also involved. The large basal vessels are those most likely to suffer, the cortical twigs and other small vessels being but seldom affected, though hyaline degeneration has been found in them. Obliterating inflammation also occurs in the veins. The results of arterial disease are narrowing and thrombosis with necrotic softening of the area supplied, or, short of complete closure, sclerosis.

If the vascular disease predominates, affecting a large number of vessels, and especially of those supplying the cortex, in such a manner as to produce slowing of the circulation and deficient blood-supply, the group of symptoms indicative of cerebral anæmia appears, viz. "slowness and difficulty of thought, indecision, amnesia, loss of interest, hebetude, irritability," &c., with occasional states of excitement. Vascular disease alone may also give rise to a group of symptoms resembling general paralysis, and sudden complete closure of a large vessel may lead to convulsion, and ultimately to the symptoms of cerebral softening, *i. e.* delirium, and chronic insanity the chief feature of which is dementia.

Syphilitic disease, therefore, when sufficiently extensive, produces certain mental symptoms, of which hebetude, dementia, and depression are prominent; but additions and modifications are met with according as it affects solely or chiefly the convexity, the base, or the vessels respectively. Vascular disease is probably the most important factor in the causation of psychosis, whether involving large or small

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vessels, and whether primary or secondary; and next the general and local pressure effects; the indirectly-produced epileptic insanity depending probably on both causes. Whether direct toxic irritation plays any important part is a point which cannot at present be decided with certainty, but that it does so is more than probable.

To complete this part of the subject it is necessary to allude to the question of the existence of a simple tertiary meningitis—a question occupying much the same position as that regarding a similar process in the secondary stage. Oppenheim seems to incline to the opinion that it is not uncommon, and quotes Gilbert and Lion's description of a sort of intermediate variety, the *meningo-myélite diffuse embryonnaire*, which is characterised by a large development of young cells, at first in the walls of the vessels and in the pia, and a fibrino-cellular exudation in the meshes of the latter. "Pachymeningitis hæmorrhagica" has also been found in a few cases. On the clinical side symptoms of a meningitic character have been described, consisting "in profound disorder of the sensorium, fever, involuntary evacuation of fæces and urine, and a course running on the whole rather rapidly to a fatal termination" (Heubner, quoted by Oppenheim), and probably many forms of acute delirium, maniacal attacks, and choreic phenomena in syphilitic patients may be due to slight degrees of some such process.* It need hardly be said that this "simple" meningitis may be combined with gummatous inflammation.

Of the prevalence of the foregoing psychoses in syphilitic cases there is no means of judging, in the absence of any reliable data as to the percentage of the general population affected with syphilis; but they form a very small proportion (Clouston gives ½ per cent.) of the cases in asylums. The incidence of the disease in the brain is determined partly by heredity and partly by other factors, such as, above all, alcoholism. Just as a contusion will form the starting-point of a periosteal gumma, so the injury done to the brain by alcoholic excess will determine the action of the syphilitic poison to that part.

There is, however, a class of nervous diseases, much more important numerically, the relationship of which to syphilis can at this day scarcely be denied, viz. the so-called "para-

* A case described by Alzheimer should be mentioned here, in which the mental and motor symptoms were identical with those of general paralysis, whereas the autopsy showed pure "luetic meningo-myelitis and encephalitis."

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syphilitic" or "metasyphilitic" group, of which tabes and general paralysis are the only members calling for notice here. As these diseases are refractory to antisyphilitic treatment, the proof of their connection with syphilis depends on the demonstration of its precedence in all cases, or at least in a larger proportion than that in which any other ætiological factor occurs, supported by other circumstances, such as an analogy between the two classes of disease in the form, and more especially in the distribution, of the lesions.

As regards tabes, most authorities are now agreed that the percentage of cases of this disease in which there has been preceding syphilis is very large. Gowers estimates 70—80 per cent., and some Continental authors give even higher rates—Erb, for example, 89·2—92·5 per cent., and others the same or more.

It has long been disputed whether the nervous elements, or the blood-vessels and connective tissue, are the structures primarily affected. If the disease is analogous to ordinary syphilitic lesions the latter view would seem the more probable. It is, however, that which upholds the essentially parenchymatous character of the disease which now generally prevails; but recently Obersteiner, as the result of observations made in conjunction with Redlich, has put forward the theory that "one, and perhaps the most important point of attack of the lesion" may be "the weakest, most sensitive, and most vulnerable spot in the posterior roots, that is, at their entrance into the spinal cord." Certain changes of an inflammatory or subinflammatory nature have been observed here, leading to connective-tissue hyperplasia, by which the roots were constricted. The changes in the spinal cord would thus be simply ascending secondary degenerations. Whatever be the ultimate fate of the theory, this observation is especially interesting in connection with the true syphilitic neuritis described by Kahler and others as affecting the posterior roots; and it greatly strengthens the analogy between the two diseases.

Uncomplicated tabes is of little importance as a factor in the causation of mental disease. When psychical symptoms do occur, they are produced indirectly, as a result of the pains, sexual impotence, &c., which give rise to ideas of persecution, to melancholia, or to violence; unless, indeed, the uncontrollable sexual desire of the early stages forms an exception. The real importance of the disease for the psychologist lies in the frequency with which it is associated with

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general paralysis. The association on the clinical side may manifest itself merely by a "slight optimism and mental weakness," or by anything between this and full-blown paralytic dementia; while the anatomical lesions of the two diseases may be found together. Indeed, an eminent authority has asserted that "general paralysis is but a cerebral tabes."

The intimate connection of general paralysis with a disease admitted, in most quarters, to be in some way caused by syphilis in the majority of cases creates a certain presumption in favour of a similar origin for the former, and this presumption is strongly supported by other considerations. The rarity of the disease in precisely the classes and localities where syphilis is uncommon is an important fact in this connection. We have, for example, the well-known instance of the York Retreat, peopled mainly by Quakers, and the fact that the disease is seldom seen in remote countries, such as Iceland (where but three cases seem to have been recorded, all in persons who had been absent from the island or lived in its single seaport); in rural districts, such as Highland glens and country towns, even though drunkenness and illicit intercourse may abound, as in Scotland, or the people marry early and procreate large families, as in Ireland.

Secondly, Fournier asserts, and cites the experience of a host of French syphilographers in addition to his own to prove, that a relatively large number of syphilitics "gravitate into general paralysis."

Nevertheless, when we come to actual statistics of antecedent syphilis in general paralysis, the discrepancy between the results of different investigators is very surprising, the proportion of cases with ascertained syphilis varying from 11 to 94 per cent.; and accordingly some authors deny syphilis any share in the ætiology of general paralysis, while others (Möbius, Hirschl, &c.) attribute every case in some degree to its agency. This discrepancy is due to the difficulty of obtaining a distinct history, to the variability in the manifestations of general paralysis, and to the occurrence of certain groups of symptoms closely simulating this disease, and in some cases, moreover, due to tertiary syphilis, as has already been seen. But it is important to note that the percentage of syphilitic cases is large in recent investigations, and increases with the care taken in eliciting the history and with the opportunity for doing so—for example, the percentage is higher in private than in pauper patients.

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Opinion in this country seems to incline in favour of assigning an important *rôle* to syphilis, though with notable exceptions. Thus, although Clouston does not attach any great importance to it, and Mickle seems inclined to think its influence overrated, McDowall estimates the proportion of syphilitic cases of general paralysis at about 80 per cent.; Savage gives at least 70 per cent.; Gowers more vaguely thinks that syphilis is an antecedent in "a large proportion" of cases, and Hyslop in more than half. On the Continent, however, where the subject has received much attention, the importance of syphilis in the causation of general paralysis is almost universally admitted. The results of a few of the investigations may be mentioned. Mendel found syphilitic antecedents in 75 per cent. of general paralytics, in 18 per cent. of other cases. Rieger, as the result of a statistical inquiry, found 364 to 436 syphilitic cases in 1010 general paralytics, as contrasted with 33—45 syphilitics in 1010 ordinary cases. Hougberg found syphilis to be certain or probable in 86·9 per cent. of the 107 cases investigated, and in 4·22 per cent. of ordinary cases. Binswanger gives 50 per cent.; Jacobson found syphilis certain or probable in 43 to 50 per cent. of his female general paralytics. Hirschl has compiled a table giving the results obtained by fifty-five investigators, which vary from 11 to 94 per cent. Thirty-seven, however, give a percentage of 50 and over—many very much over,—while the average is 56·89—60·63.

The most important recent work on the subject, however, has been done by Hirschl himself, who examined the histories of 200 male general paralytics in Krafft-Ebing's clinic. In twenty-five no history was obtainable, and these having been deducted—which may or may not have affected the results—syphilis was found certain or probable in 81 per cent. of the remaining 175 cases, being enormously more frequent than any other antecedent. He also made a new and important point by investigating the histories of sixty-three patients suffering from undoubted late syphilis, and only succeeded in 63·5 per cent. of these cases in obtaining a certain or probable history of infection, *i.e.* a proportion under that in which the general paralytics gave a similar history.

More recently still Greidenberg found syphilis to be the sole cause in 32 per cent., and an associated cause in 62 per cent., of 230 cases of general paralysis in which a history was obtained; and the writer, in a rough investigation of the histories of fifty cases, chiefly at the Richmond District

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Asylum, found antecedent syphilis to be certain or probable in 44 per cent.; but as in many of the cases there was no history obtainable, while in none was the disease excluded, it is probable that the percentage was really much higher.

Without going so far as Hirschl and others, who assert that syphilis is the sole essential factor in the causation of general paralysis, a position which cannot be maintained if we accept the statement that in certain cases it has been possible to exclude it, it may from the above facts be fairly concluded that this disease is antecedent to general paralysis in a far larger proportion of cases than any other single ætiological factor, alcoholism giving a percentage of only 24·9, and heredity 31·37 to 32·63 (Hirschl). It may also be noted that the existence of the developmental variety of general paralysis supports this view, inasmuch as hereditary syphilis has been detected in a large proportion (72·2 per cent.—Justschenko) of the cases of this class.

The strongest argument* in favour of a syphilitic origin for the majority of cases of general paralysis is at present undoubtedly to be drawn from such facts as those just given. At the same time they are to some extent supported by a comparison of certain of the phenomena, clinical and anatomical, of the disease in question with those of undoubted syphilis. In seeking to establish an analogy too much importance must not be assigned to the frequent identity of the ocular symptoms, such as loss of light reflex, diplopia, and the like, as these, when occurring in general paralysis, are open to the explanation that they were due to ordinary syphilitic lesions, as in other cases, and have no real connection with the graver malady; but if this is so, on the other hand, they go to prove that syphilis in these cases has preceded.

The amount of weight to be laid on the resemblances which certainly exist between the anatomical appearances found in the two diseases, will largely depend on the view taken as to the early pathology of general paralysis. If it be held to affect the vessels primarily, it will be seen that the analogy is a very strong one, since in some degree vascular

* The altogether unjustifiable experiment, tried in Krafft-Ebing's clinic, of inoculating eight general paralytics with fresh chancre-secretion, is of little value as an argument, even though none of the cases showed any syphilitic reaction, owing to the (happily) small number of patients so dealt with. More important is his assertion that "it has never yet been observed that such a patient acquired primary syphilis, although these patients, at least at the beginning of the disease, probably give themselves up to numerous sexual aberrations."

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affections are probably present in all cases of syphilis (Oliver), and come into particular prominence when this disease affects the brain. Even in the special character of the vascular lesions some resemblance may be detected, as, for instance, in the hyaline degeneration of the vessel walls observed in both diseases, and in the fact that nuclear proliferation may begin in the adventitia in syphilis, which Bevan Lewis holds to be a peculiarity in general paralysis. Attention may also be called to the resemblance between the changes common in the pia-arachnoid in the latter disease, and those in the syphilitic "meningo-myélite diffuse embryonnaire" of Gilbert and Lion. Lastly, it has been seen that syphilitic disease of the vessels only may give rise to a group of symptoms resembling general paralysis. Even if, however, the nervous structures be considered the point of incidence of the disease,—a view which appears to be gaining ground in this country—an analogy may be found in the simple nuclear degenerations and the destruction of cerebral nerve-fibres met with in undoubted syphilis. It is, however, probably impossible at present to decide between these two views, since whichever be the primary lesion, the other soon succeeds it; but a point of resemblance which is unaffected by the controversy is the distribution of the cortical changes, since when syphilis affects the convexity of the brain the seat of election is the fronto-parietal region, precisely the area over which the changes are most marked in general paralysis.

Since, therefore, syphilis and general paralysis are relatively co-extensive in their distribution; since general paralysis often follows syphilis, and syphilis is antecedent in at least the great majority of cases of general paralysis, and occurs in a larger proportion than any other ætiological factor; and since, moreover, there are many points of resemblance in the clinical and anatomical phenomena of the two classes of disease; it may fairly be concluded that syphilis is the most important factor in the causation of general paralysis.

As to its mode of action, the most probable view seems to be that it produces its effects by impairing the vitality of the structures in such a way as to render them the *locus minimæ resistentiæ,* and so especially liable to damage by other influences. The failure of antisyphilitic treatment is, to some extent, at all events, an argument against the presence of an active syphilitic poison, but nevertheless the latter view

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cannot be held to be absolutely disproven. Indeed, Piccinino, working with a modification of Lustgarten's method, succeeded in finding bacilli in large numbers in the cortex of five general paralytics (some of whom, however, are said not to have had syphilis). But his bacilli seem to be larger than Lustgarten's so-called "syphilis bacilli," and in any case the very doubtful position of the latter renders the observation, interesting as it is, of little value in the present discussion. Hirschl failed to find Lustgarten's bacillus in the cortex of three general paralytics stained by several of the recognised methods, and with this result the observations of the present writer, so far as they have gone, are in accord.

The conclusions of the present brief study of syphilis in its relation to insanity may, though at the risk of seeming over-definite, be finally summed up in the form of a suggestion for a provisional scheme of classification as follows:—

I. Insanity of early syphilis (primary and secondary).
   1. Acute toxic insanity (analogous to delirium or mania a potu).
   2. Melancholia with or without dementia, probably due to cerebral anæmia.

II. Insanity of late (tertiary) syphilis.
   1. Insanity due to syphilitic disease of the base and vessels.
   2. Insanity due to syphilitic disease of the convexity.

Most, if not all, cases of cerebral syphilis in which insanity has been caused by epilepsy will fall under the second head (II, 2), but should rather be classed with epileptic insanity, being only indirectly due to syphilis.

III. Metasyphilitic (parasyphilitic) insanity.
   1. Insanity of tabes (so far as due to other than "moral" causes).
   2. General paralysis of the insane.*

This classification only includes cases in which there is certainly, or probably, a gross anatomical change at the basis of the mental symptoms. But it is obvious that there are various indirect ways in which a disease like syphilis may produce morbid action in unstable minds. Such are the fear of contracting the disease; the worry, remorse, and anxiety produced by its existence; and the pain and insomnia and other sensory symptoms so common in its course. With this

* If Fournier's "parasyphilitic epilepsy" should prove to give rise to insanity (which this author, however, strenuously denies), the same remarks will hold good as in the case of the tertiary variety.

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class of cases, as being but the indirect result of the disease, and in no way peculiar, no attempt has been made to deal.

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*A Note on the Comparative Intellectual Value of the Anterior and Posterior Cerebral Lobes.** By CROCHLEY CLAPHAM, M.D., The Grange, Rotherham.

IT would be "flogging a dead horse," at the present day, to offer arguments against the exploded phrenology of Gall and Spurzheim, which has long been discredited by scientific men.

Their, so to speak, "lobular" type of phrenology has been replaced by one of a "lobar" type possessing more claim to attention.

In this newer phrenology the parietal lobes have been definitely occupied by the motor centres of Ferrier and others, and the temporo-sphenoidal lobes by the centres of the special senses, leaving unoccupied the greater part of the anterior (frontal) and posterior (occipital) lobes.

Of these anterior and posterior lobes, the former have been

* Read at the General Meeting of the Medico-Psychological Association at Sheffield, February, 1898.

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