regurgitated food. The treatment is very unsatisfactory and very few cases of cure have been recorded. Carminatives, electricity, and nerve sedatives have been employed, but with only temporary results. In one case, however, in which hyperacidity of the gastric juice existed, treatment of this condition permanently stopped the disorder.

GENERAL.

By J. F. G. Pietersen, M.R.C.S.

Epilepsy.

Reference to Flechsig's Bromo-opiate Treatment of Epilepsy was made in the last number of this Journal. Though the results chronicled have so far been few in number, the adoption of this form of treatment in severe or obstinate cases of epilepsy, especially when associated with pronounced mental disturbance, appears worthy of consideration. In the *Zeitschrift f. Psychiatrie*, Bd. lii., two communications have appeared, each of which gives most favourable results. Linke has administered opium and bromides in succession to seven epileptics, six males and one female, in all of whom marked psychical aberration existed. In rapidly increasing doses he exhibited opium first for six weeks, suddenly changing the medicament to large doses (7·5 grms.) of bromide, which being continued for another period of six weeks was then reduced to a daily dose of 5 grms. This is the method advocated by Flechsig, though other therapeutists have lengthened the periods of administration of each drug. Linke found that during the opium course the epileptic seizures increased greatly in number, and that the body weight in some cases showed a marked diminution. As soon as the bromides were substituted for the opium the fits immediately diminished in frequency, and the body weight in the affected cases increased again. The ultimate result of the treatment was that in one patient the seizures had not recurred from the commencement of the bromide course until the date of his paper; in another, one fit occurred on the third day after beginning the bromides, and then after an interval of freedom for nine weeks two seizures ensued; a third patient had a fit on the first morning of the bromide treatment, after which an interval of sixty-five days without fits elapsed, when the bromide had to be discontinued owing to bromism; five days after its withdrawal the patient had another fit. With reference to the mental condition two patients showed a comparative improvement, they became more cheerful and patient of control; one of these, who had been subject to accessions of intense furor, subsequently remained quite free from them. Two of his seven patients died during treatment, one apparently by reason of deleterious action of opium on an affected cardiac

muscle, the other owing to exhaustion due to the epileptic status. In nearly all a moderate degree of constipation was induced when the daily doses of opium reached ·60 grms., easily overcome, however, by simple aperients. When the maximum dose of opium was reached serious symptoms supervened, which rendered careful observation of each case needful. As only two and a half months had elapsed between the commencement of the bromide course and the publication of his paper, Linke discreetly draws attention only to the remarkable effects of this mode of treatment in cases hitherto wholly uninfluenced by therapeutic measures; he certainly makes no claim for the method as a specific curative.

In the same journal Rabbas relates his experience of a similar course of treatment adopted in eleven female and five male epileptics, and his communication has greater value as two years have elapsed since the experiments were made. Fifteen of these cases had previously been unsuccessfully treated with bromides only. Rabbas began with ·3 grms. of Pulv. Opii per day, increased this gradually to ·9 grms., after which he suddenly changed the treatment to a bromide course of 7·5 grms. daily. During the opium treatment the number of fits increased; in one case only did the body weight remain stationary, in every other instance observed there was some diminution. In six nausea and vomiting occurred, but constipation was not a marked symptom. Some mental improvement was noted in every case. With the sudden cessation of opium severe vomiting sometimes ensued, but dangerous symptoms never actually showed themselves. As soon as the bromides were given in place of the opium the fits at once diminished in frequency, in twelve patients they disappeared, and in one case only was there a more serious renewal of the fits. In five cases the attacks remained absent from six to ten months, and on recurrence were less frequent than formerly; in three there has for two years been no recurrence whatever. Two of his cases died during treatment, both (females) succumbing to the exhaustion of the epileptic status towards the end of the opium stage. The results among the males were less satisfactory than among the nine surviving females.

The treatment is one that may certainly be attempted in cases of some severity, though great care must necessarily be exercised in their supervision during the high dosage of opium and in the transition period of medication.

Voisin and Petit (*Arch. de Neurologie*, 1895, April-August) show that in many cases of epilepsy the attacks occur or recur in groups, while the intervals are marked by partial or complete absence of single fits, and that towards the end of such an interval it may be noted that symptoms indicative of gastro-intestinal disturbance appear, such as a thickly furred tongue, constipation, epigastric distension, anorexia, etc. One or two days after the onset of these signs of digestive abnormality the epileptic phenomena make their

appearance—mental symptoms and actual epileptic fits or their equivalents. As soon as these latter, the recurrences of which are very numerous within a short period, have spent themselves, the condition of the tongue will be found to have improved, the other digestive disturbances will pass away, the whole alimentary function in fact assuming a normality of course, until the supervention of another similar functional gastro-intestinal disturbance, apparently without any definite cause, ushers in a new series of epileptic onsets. In patients prone to well-marked psychical epileptic phases, either peri- or post-epileptic, the furred tongue, constipation, etc., may be observed to be almost constant antecedent symptoms, and with a return to quietude these alimentary disturbances will be found to disappear. In a case in which the series of seizures lasting from six to eight days was interrupted by a few days' cessation of fits it could with certainty be demonstrated that some causal connection existed between the two series of phenomena. Massalongo some fifteen years ago described such cases as instances of "gastric epilepsy," and Pommay (*Rev. de Médécin*, p. 449) has cited two examples of his own and one of Lépine's as illustrative examples of this condition. He attributed the cerebral disturbance to reflex irritation along the vagus, but Voisin and Petit follow Massalongo in regarding them as due to an auto-intoxication. As among uræmic symptoms epileptiform onsets may occur with difficulty differentiable from true epileptic fits, we have an example at hand in support of their theory, and a causal connection is very probable when we consider the close association of the digestive abnormalities with the periodical recurrences of fits, the more so when we remember that the former are invariably antecedent phenomena. The digestive disturbance may be either the cause or the consequence of an auto-intoxication, and probably the latter, for we are frequently able to recognise the occurrence of some alimentary disturbance after a known intoxication, and always if the intoxication is the result of some ptomain, and the likeness of this to the ante-epileptic alimentative disturbance is striking. The authors have on this basis made a laborious investigation in which successive analyses of the urine for albumen, tests of its toxicity, etc., were made, and careful quantitative estimation of its urea, phosphates, etc., undertaken. In such urine analyses of epileptics they appear to have found, directly after the fit-periods, a substance with a peculiar musk-like odour, soluble in water, and of extreme toxicity towards lower animals. Its subcutaneous injection caused death with convulsions. From these examinations they conclude that antecedent to the epileptic accessions the urine has been hypotoxic, and after the fits hypertoxic. The condition of the arterial system was also closely investigated during and after the attacks. Sphygmographic tracings showed that the blood pressure during the tonic and clonic phases of a fit fell so rapidly that a superficial wound inflicted during a fall ceased to bleed; invariably after the stertorous respirations of the second

stage of a fit the blood pressure rose, and any wound incurred began to bleed again profusely. Careful note, too, was taken of the general sensorial, speech and motor functions, and special attention was paid to the condition and functions of the alimentary system. Heredity, alcoholism in the young, drug-abuse, and various chronic affections, *e.g.*, syphilis, were found to be predisposing influential factors towards such auto-intoxication. The blood was carefully examined, and in some instances micrococci were discovered, but the authors wisely do not attach much importance to such discovery, though they think their presence may indicate that toxine formation is being carried on within the body. Without going further into their investigations we may note that they express the conviction that epilepsy, not only the gastric but also other idiopathic forms, may be regarded as the result of an auto-intoxication, the poison acquired or collected in the organism inducing these convulsive phenomena. The possibility that some other operative cause may be existent, as in the production of Jacksonian and reflex epilepsy, is not lost sight of, but they consider generally that—1. A hereditary predisposition exists in the central nervous system for the production of epileptic onsets. 2. That the epilepsy may result either from some reflex nervous disturbance or from an auto-intoxication, and that this may be caused by an auto- or hetero-infection. They close an interesting paper by urging the importance of close attention to alimentation, the use of purgatives, intestinal antiseptic medication, diuretics, etc., in all cases of epilepsy, indicating how, under certain circumstances, these measures may have a favourable influence in warding off or diminishing attacks.

Sulphonal.

The Pathogenesis of Hæmatoporphyrinuria.

In the *Zeitschrift f. Klin. Medicin* (Bd. 28), Prof. Stokvis makes a contribution to our knowledge of the ætiology of this affection. The continuous administration during successive days of a known quantity of sulphonal to dogs and rabbits was found to cause the appearance of hæmatoporphyrin, which, though in most instances of small amount, was demonstrable, as the majority of the urines examined were free from albumen. It was only when the drug was pushed to a fatal termination that albumen appeared during the last days of life. Examined post-mortem, the gastric mucous membranes of the subjects experimented upon were found to be studded with large and small hæmorrhagic punctæ, and spectroscopic examination displayed the presence of hæmatoporphyrin in these localities. A similar abnormal condition of the urine was produced by the introduction of pure blood into the stomach. Small quantities of blood were daily administered to dogs and rabbits, with the result that hæmatoporphyrin speedily appeared in the urine. The same effect has been produced by Zeehuisen by feeding animals with raw (or hæmoglobin containing) beef.

The artificial digestion of blood with pepsin, hydrochloric acid, and sulphonal results in the formation of hæmatoporphyrin. An interesting question was raised as to whether this abnormal urinary constituent, in cases of lead colic, could in a similar manner be explained, and experiments on rabbits rapidly poisoned with acetate of lead, after some days' fasting, proved the conjecture to be correct. Numerous mucous hæmorrhages in the stomach were found, and spectroscopic examination of these revealed the presence of hæmatoporphyrin. The ætiology of this symptom would therefore appear to be a transformation of hæmoglobin in the intestinal tract through the action of the digestive fluids; an explanation, too, is furnished of the manner in which sulphonal acts as a poison.

As an addendum to Hirsch's case of acute sulphonal poisoning mentioned in the last number of this Journal, we may note a case published by Wyss *(Correspondenzbl f. Schw. Aertze)* of a young girl, which, from the description, appears to have been one in which the hypnotic effect of the drug was combined with a state of hysterical lethargy. Sulphonal, it may be noted, rarely acts as an acute poison in the normal healthy subject. Thus Neisser has related the case of a patient who with suicidal intent took no less than 100 grms. of sulphonal in one dose—the only result was a prolonged sleep of four days. In Wyss's case the early symptoms following four doses of 1 grm. of sulphonal were lethargy, succeeded twenty-four hours later by acute muscular contractions (probably hystero-epileptic in character), and later on by alternations of these conditions, lasting altogether for fourteen days. The patient, after complete recovery some months later, denied all recollection of the affection. The danger of sulphonal treatment lies rather in its long-continued use than in any direct acute effect; the urine is evidently never affected in acute poisoning by very large doses.

Trional.

Some cases of chronic trional poisoning have been published by Reinicke *(Deutschr. Med. Wochenschr.*, 1895, No. 13), who instances one in which 40 grms. of trional had been administered during 107 days (in which, however, there were intermission periods of 21 and 8 days). He found the urine to contain free blood, and Quincke doubts whether in trional poisoning hæmatoporphyrinuria ever occurs. Schulze, however, in 1894, described a case in which hæmatoporphyrin certainly occurred in the urine. Reinicke's case, which also had dysenteric symptoms, recovered on ceasing the administration of the drug.

Acetonuria and Mental Disorder.

Prof. Wagner, Dean of the Vienna School of Medicine, in a recent paper read before the Vienna Medical Society on Gastro-intestinal derangements and mental affection, remarks that acute

cerebral disease is not an uncommon sequel of febrile affections, and that a similar relationship exists between infectious diseases and polyneuritis, for the last-named may be caused by toxic agents such as lead, alcohol, etc., as well as by specific infectious maladies, such as pneumonia, enteritis, etc., and by impairment of the gastro-intestinal functions. As infectious diseases are now regarded as due more to the toxines derived from the specific micro-organisms than to the micro-organisms themselves, these causes must also be looked upon as toxic in their nature. In like manner mental disorder may arisé as the result of a perverted gastro-intestinal action, and acetonuria is the most noteworthy symptomatic evidence of this. Acetone, though a normal urinary constituent, is increased during increased tissue metabolism. It has been found in the blood in febrile cases by Von. Jaksch, who also first drew attention to its presence in the urine. It appears to originate in large measure during abnormal gastro-intestinal action, and the perverted metabolism which causes it probably leads to the formation of toxines capable of inducing serious mental disturbance. Wagner advocates the use of iodoform in daily doses of 1 grm. divided into ten parts, each of which would therefore contain about 2 grains. Acetonuria, in his opinion, is due either to micro-organisms or fermentative changes in the intestine, and as improvement occurs when excess of acetone is no longer a urinary constituent, he suggests that gastro-intestinal disinfection would probably be the best way of treating these cases.

Aphasia in Linguists.

Pitres *(Rev. de Méd.*, 1895, H. xii.) leads up to the description of a case of aphasia in a linguist by a careful review of the literature of this particular occurrence of speech disturbance. The instances cited from the works of Trousseau, Charcot, Bastian, etc., were of individuals who had been competent linguists in two or more languages, French, and a dialect or patois such as Gascon or Basque, or more widely differentiated languages such as German, English, Spanish, Italian, Russian, etc. In each of the six instances, quoted from standard works, the aphasia was the result of a right hemiplegia, and in every case there was immediate loss of the speech originating faculty and speech recognition. A gradual recovery ensued in every one, but in no case did any of the patients reacquire full comprehension or faculty of speech in more than one language, the others in which they had been able to converse fluently having become mainly unintelligible to them. One patient, born in Béarn, and who up to his twelfth year had never spoken or heard any other language than the dialect of that district, and who later in life acquired a proficient knowledge of pure French, which he then invariably used, became affected at the age of 48 with right hemiplegia and

aphasia. Three years subsequently he could again converse in French, but he had lost all power of speaking his native dialect though able in a certain measure to understand what was said to him in it. The second patient, who spoke Gascon and French before his aphasia, reacquired the latter, and similarly to the first failed to speak the dialect, though understanding it when spoken. In the third case, able to speak French, Basque, and Béarnese, the reversion was to Basque alone. The fourth, a French, Spanish, and Italian linguist, lost his capacity to reacquire the last named language, regaining his native tongue, French, and the Spanish he had learnt to speak when 25 years of age. The fifth case, that of a Frenchman, who was able to converse in four languages, as well as in the Basque dialect, reacquired only his native tongue and lost totally all perception of or power of speech in the others. The sixth case considered was similar to the last described. It appears from a consideration of these similar cases that the mother-tongue, with one exception, was the first to return. Pitres is of opinion that the course of events in the aphasia of polyglottics can conveniently be divided into stages: (1) the total loss of the power of recognition of any language; (2) a regular return of comprehension of that language which had most frequently and readily been used by the patient prior to his affection; (3) a regular return of the faculty of expressive speech in such a language; (4) a return of ability to comprehend a strange language; and (5) the eventual restoration of ability to converse in such. It appears to us that Pitres has lost sight of the fact that in the speech education of the cerebral centre in childhood and even in adult life the right centre may receive in a greater or less degree impressions mainly conveyed to and registered in the left, but that the left alone usually acts as the emissive centre for speech. In speech re-education then, after destruction of the left centre, the right very soon acquires the power of recognition, having probably had some antecedent preparation, but the speech orginating faculty is a slower process, as the function has to be worked up to a proper degree of action. As early impressions are the most lasting, the mother tongue will be the one most easily reacquired by the uninjured centre; any other language would probably be difficult of acquirement, in proportion to the previous reception or non-reception by the right centre of speech impressions. Another point is that in all these cases the reacquirement appears to have taken place primarily of that language which was used to the patient on his regaining consciousness— so that it resolves itself into a matter of education of a more or less prepared right speech centre, and in proportion to its state of preparedness, so will recognitive and expressive speech power be more or less rapidly developed. It may be that the right centre has never received any impressions whatever, and in that case the language will be as difficult to acquire as if it had never previously been known. The case related in detail by Pitres was

that of a man aged 35, a competent French, Gascon, Spanish, Italian, English and Arabic linguist, and who after an apoplectic seizure had right hemiplegia with aphasia. The hemiplegia soon disappeared, so that after two months traces only of that affection were left. The aphasia disappeared more gradually. His power of comprehension returned 17 days after the seizure, and was limited to French; he was, however, utterly unable to express himself therein. Three weeks later he was able to understand whatever was said to him in that tongue, and he began to articulate, voluntarily, certain French words. His acquired languages remained completely incomprehensible to him. Three months later he was brought into contact with some of his Gascon relatives and in three days he acquired the recognition of, and in some measure the power of expression in that dialect. The four other languages in which he had previously been able to converse fluently, remained utterly unintelligible to him. Four months subsequently, he began rapidly to reacquire recognition of Italian and Spanish, and had at the time of the paper commenced to give verbal expression in those languages. English and Arabic he had not been able to reacquire either in recognition or speech.

The somewhat venturesome hypothesis that the inferior portion of the third frontal convolution is that immediately occupied as the centre of record and expression of one's native language, while languages acquired later in life find their centre in the remaining portions of that convolution, cannot, by reason of lack of evidence, be entertained. Aphasia moreover cannot be simply explained as the result of a definite circumscribed organic lesion only; there is a dislocation of functional association to be considered, such as is seen in certain forms of aphasia of mental origin, and not due to any organic lesion; in such functional aphasia, too, those centres and tracts will first be restored to activity which, before the aphasia, functionalised earliest and most frequently. As the psycho-acoustic centre is developed prior to the motor speech centre the comprehension of language will necessarily precede that of speech expression, and the reversion to articulate speech coincides with the return or assumption of function of the phonetic articulation centre. In proportion to the more ready activity of the uninjured centres and tracts there will, under favourable circumstances, be a restoration of the faculty temporarily lost, first of comprehending, and then of speaking, primarily the earliest acquired language, and, later on, those of more recent acquisition.

Cerebral Tumours and Mental Affection.

Thoma (*Allgem. Zeitschr. f. Psych.*, Bd. lii., Hft. 6) records three cases of cerebral tumour in which some form of mental disorder was the early and main symptomatic evidence of cerebral lesion, there being none of the usual sensori-motor phenomena to make this condition even suspected during life. His first case was that

of a man aged 52, who, after sundry syncopic attacks, developed melancholia with loss of memory and considerable lack of energy. He died suddenly after having suffered for a few days previously from vertigo and vomiting succeeded by deep coma. Three months only had elapsed between the first appearance of his cerebral symptoms and death. The second case was of a female, aged 58, who was brought to the asylum suffering from delusions of unworthiness and persecution. In this case sudden death also occurred after a few days of spastic paralysis of the right arm and leg and right ocular amaurosis. The duration of the affection was but two months. His third instance was of a female aged 52, whose early symptoms were pains in the back, the occipital region, and both legs, following which there developed delusions of persecution. After severe vomiting, clonic spasms in the left arm and leg and left facial paresis, she suddenly died, the duration of all her symptoms having been but one year. In each case a pronounced mental heredity existed; in the first this showed itself before the onset of pronounced insanity by the irritability and peculiarity of conduct and the morbidly introspective moods of the patient. The second case had had two previous attacks of melancholia. The tumours could in fact only be regarded as causative factors of the psychoses in that they reacted on brains predisposed hereditarily to mental affection. In each case moreover the features of the mental affections pointed to a diagnosis of hysteria when bodily symptoms supervened. The continued complaints, the craving after notice, the exaggeration of the mental symptoms when they thought themselves specially observed, the elaborate and demonstrative suicidal attempt in the presence of others of one of the cases, all lead to the belief that hysteria rather than any organic lesion formed the basis of their affections when certain unexplainable physical symptoms declared themselves. Thoma suggests that these hysteriform symptoms may have been induced by the presence of these tumours, but without discussing that point we may regard the cases as interesting as they show how careful we must be not hastily to regard every hysteriform symptom as one of hysteria.

Syphilis and Nervous Disease.

In the *Zeitschrift f. Klin. Med.*, Bd. xxix., S. 140, Storbeck discusses the assumed relationship between tabes dorsalis and syphilis from a careful clinical and historical investigation of 108 cases of locomotor ataxy, which during three years had been treated in Prof. Leyden's clinic and in private practice. He arrives at the conclusion that an ætiological connection between these affections cannot be maintained. He insists that in his statistical summaries he has been careful to eliminate all sources of error, thus implying that many of the early statistics of others have been unreliable. He divides his cases into three groups, in the first of which he

places all such as both by their history and symptoms gave evidence of an undoubted antecedent syphilitic infection; in his second group occur those cases which he considers doubtful; and in the third section those which neither by their history nor by any objective sign showed traces of precursory specific disease. He then found that of 108 cases of tabes taken from every social grade 22 were certainly syphilitic, 23 were doubtful, and 63 were certainly not syphilitic; that is that only 20·4 per cent. of tabetics were syphilitics as well. By adding one-half of his doubtful cases to the first group he finds that the maximum proportion only reaches 30·6 per cent. The results thus obtained by Storbeck closely correspond with the figures furnished by Westenhoeffer in 1894, who tabulated 72 cases of tabes occurring at the Charité Hospital, Berlin, between the years 1884 to 1893. His percentage of tabetics with indubitable history of early syphilis was 25·6 (which approximates closely to the actual occurrence of syphilis in the population, placed by Naegeli at 22·5 per cent.), and the inclusion of his doubtful cases gave him a percentage of 44, a proportion far removed from that of Fournier (93 per cent.). Storbeck has taken the pains to investigate the tabulated cases of no less than forty-eight authors, whose results vary widely; thus Déjérine calculates that no less than 97 per cent. of tabetics have an antecedent syphilitic history, while Mayer at the other extreme denies its occurrence *in toto*. He regards the high percentages of Fournier (93 per cent.), Déjérine (97 per cent.), Strümpell (90 per cent.), Erb (89 per cent.) and others as untrustworthy, in that many of these, and especially Fournier, have had a wide reputation as specialists in syphilis, and that tabetics thus affected would naturally be led to consult them, and he maintains that his objection is applicable to many other neurologists who have published their results, and who, having a preponderance of syphilitic tabetics brought before them, are driven to wrong conclusions. Storbeck also objects to the acceptance of a syphilitic history from the patient without some definite corroborative objective symptoms pointing to specific disease, and following Kaposi declares that sclerosed inguinal, submaxillary and other glands are by no means indicative by themselves of antecedent syphilis. He draws attention also to the fact that at the inception of tabes when the diagnosis of the affection is still very difficult, there not infrequently occurs a sexual hyperexcitability which may render the patient prone to syphilitic infection, and should syphilis then be contracted and undergo treatment, while some years later definite symptoms of tabes supervene, a follower of Fournier's doctrine would undoubtedly regard the specific disease as the ætiological factor of the neurosis. As a further argument against the syphilitic doctrine he adduces the usual objection that tabetic phenomena are rather intensified than diminished by anti-syphilitic treatment, and he quotes Westphal, who declares that he has never yet seen a case of

locomotor ataxy cured by mercury and iodide of potassium. Storbeck regards the published instances of tabes thus cured as not genuine cases of locomotor ataxy, but as examples of true syphilitic affection of the cord and its membranes simulating tabes. He further mentions cases in which syphilitic infection occurred during the onset of tabetic symptoms, and that anti-syphilitic treatment had a beneficial effect on the former and none whatever on the latter. Were syphilis, he contends, the main ætiological factor in the production of locomotor ataxy it would naturally be expected that a large proportion of syphilitics would later on show tabetic symptoms; but Lewin in investigating the after history of 800 undoubted syphilitic females found that five only were subsequently affected with neuroses, and that of these not a single one was tabetic. Reumont, too, found 290 cases of nervous disease in 3,600 known syphilitics, and of these only 40 were the victims of tabes dorsalis. Whether syphilis may, as suggested by Leyden, predispose the organism by a loss of resistive power to tabes, he declines to consider.

More recently Gluck of Vienna has published a pamphlet on the same subject. His arguments, too, are in refutation of Fournier's syphilitic theory. Relying on the well-known clinical fact that a syphilitic is immune so long as he presents any active grade of specific disease, he shows that were tabes a syphilitic malady a second infection in a tabetic patient would be an impossibility, and the occurrence therefore of recent syphilis in tabes he takes as a proof that the nervous affection is not of specific origin. He also instances the rarity of tabes among negroes and Asiatics, in whom syphilis is most common, and recounts his experiences in Bosnia, where this malady appears to be most rife in certain districts, and where among 3,000 patients with syphilis who had passed under his observation not a single case of locomotor ataxy was to be found.

As bearing closely on this subject it may be interesting to review the arguments of Hirschl (*Wien. Klin. Rundsch.*, Nov. 10, 1895) in the matter of the ætiology of general paralysis. He has analysed 200 cases of general paralysis occurring during ten months in von Krafft Ebing's clinic. The majority of these, all males, were of low social grade. In no instance was the disease definitely attributable to purely mental influences, and heredity was traceable in only 11 per cent. Hirschl admits the possibility of traumatic influences as exciting causes in patients already afflicted with syphilis, but he denies any connection between lead poisoning and general paralysis. The most important causative factor he maintains is syphilis. The antecedent occurrence of this he has proved in 56 per cent., and a probable pre-existence in 25 per cent. of the 175 cases in which reliable histories could be obtained. The incubation period he places at from two to twenty-nine years. He argues that the affection is a purely syphilitic

one, and he supports Obersteiner's view of the analogy of general paralysis with syphilitic perihepatitis, both beginning as inflammatory changes, followed successively by disappearance of the parenchyma, interstitial changes, and eventually atrophy. He regards general paralysis as a late form of syphilis commencing as a syphilitic encephalitis of subacute form, proceeding to syphilitic cerebral atrophy. His view as to the pathology of the cerebral process is based on Lang's dictum that any organ in which a gumma develops must have suffered from irritation in the early stage of syphilis. The contagion residuum in the brains of general paralytics is propagated with renewed vigour owing to the natural hyperæmia of the organ during functional activity, to functional hyperæmia from various mental causes, or to the occurrence of apparently slight traumatic influences.

The *Lancet* of February 22nd, 1896, contains an interesting paper by A. H. Ward on Latency in Syphilis, which may profitably be consulted by those interested in this subject.

Sensory perception at various age periods.

Many investigators have indicated the diminution in sensory perception to be found in so-called degenerates, and Ottolenghi has endeavoured to show that this applies as well to individuals of low social grade. To enhance the value of this psychological inquiry he has *(Zeits. f. Psych. u. Phys. der Sinnesorg.*, Bd. ix., Hft. 5 and 6) published the results of his examination as to the general sensorial function and response to painful impression at various age periods. As stimulus he employed the faradic current, and by means of a faradimeter he was enabled to determine minute variations in electrical strength. He distinguishes various grades of sensibility, ranging through numerous degrees from extremely marked sensory perception amounting almost to a hyperæsthetic state, to a pronounced dulling approaching the anæsthetic condition. His tables appear to show—that the ordinary sense of feeling is fairly well developed in children, but varies somewhat in degree, increases steadily with years, and reaches its maximum at the period of adult life; that in adults there are grades of sensibility which differ not only with small age periods, but also with the social status and what he terms "the degree of degeneracy presented." It appears further that at an advanced age sensory perception declines markedly, so that response to the faradic stimulation is less even than in children. With reference to pain reaction he shows that the minimal degree of stimulation acting as a painful impression (30-40 volts) was sufficient for some, while others required a higher degree (130 volts) before the sensation was translated as one of pain. There are therefore, as in ordinary æsthesia, widely varying grades of algesic perception. As in ordinary sensation, he finds that the social state and "the degree of degeneracy" influenced the per-

ception of painful impressions. The influence of age periods was more marked in these experiments than in those on ordinary sensation, and he established from his tables that during youth very little pain recognition for the most part exists—a somewhat unexpected result—that pain reaction increases with years, but in contradistinction to his results in general sensibility it does not sensibly decline with old age. Similar experiments on females, though not completed, lead him to believe that sensory perception in them also develops with increasing years, and that the degree of perception between girls and boys of the same age shows no marked difference.

Criminal Anthropology.

Two recent publications *(Iets over Crimineele Anthropologie*, by Prof. Winkler and Dr. J. D. v. d. Plaats: Geneesk. Bladen ii., Nos. 5 and 6; and *De Beoefening der Crimineele Anthropologie en Gerechtelijke Psychiatrie*—an introductory address by Prof. Jelgersma at the University of Amsterdam) present us with a fairly concise *résumé* of the views generally accepted by the followers of Lombroso in his study of the criminal, and mark the degree of interest which attaches to this subject at the present day in Holland. It has always occurred to us that Holland is noteworthy in its possession of some able scientists who are but unfortunately too ready to grasp at the latter day developments of psychology, to parade with some degree of dogmatism the illogical inferences of others. Hypnotism, which for a season held the field, rose through their exertions to the position of a revived science, was vaunted by them as a panacea for every psychic ill, and has finally become consigned to its previous obscurity now that the more alluring doctrines of Lombroso and his school have been placed before them. It is the study of the criminal that now possesses them, they keenly note his every organic degenerative sign and set on it the seal of a psychical meaning, they accept the edicts of "the master" with childlike faith, and strike out for themselves new and startling lines of investigation which by their utter irrelevancy serve to evoke in their less enthusiastic brethren feelings rather of regret than derision.

It has been reserved for an English writer on matters criminal to reproachfully taunt psychologists of this country for the utter lack of interest they display in this new study, merely because they fail to subscribe to the doctrines of the Italian and German schools; but this cannot be considered a very culpable apathy when the reflection is indulged in that the physical investigation of the criminal originated in England and that English alienists prefer to interest themselves not in hasty deductions from utterly insufficient premisses, but in a careful investigation of indisputable facts, before they will consent to commit themselves to any final judgment in the matter. We cannot recognise that Lom-

broso's work is one of pure scientific investigation; its very basis is unscientific. He has never extended his researches beyond the prison walls into the associated mental and physical peculiarities of the normal man, for he has studied the abnormal only; nor has he followed the degenerate child through life to verify those psychic deviations from the normal which he and his followers maintain are the associations of such degenerative stigmata—sufficient is it for them to tabulate certain atypical physical developments and to label them as evidences of psychical degeneracy or abnormality merely because they are found allied at times. This to us appears to be making folly of science. Much we grant may be learnt from a study of the criminal man in his physical and mental peculiarities of type, but the time is not yet ripe for deductions. To specify but a few of the unrecognised factors in the study of Criminal Anthropology, or as Ferri more aptly terms it, the natural history of the evil-doer—we are utterly ignorant of the variations in skull conformation and in facial type induced by certain mental states and specified lines of abnormal conduct; this alone is a subject which requires careful research before we can begin to enlarge on degeneracy and its signs—we cannot as yet explain the occurrence of criminality in the man of normal, mental, and physical development, and of hitherto normal conduct, nor can we yet elucidate the conjunction of a degenerate physical conformation with a healthily working mind, while no allowance whatever is made for that easily observed and indisputable fact that every child during its development from infancy to the adult stage passes from a condition of mere animal existence and from a state akin to that of the savage through successive stages of mental and moral civilisation until it reaches a finality of conduct which we term right or wrong; his environment and education, if evil, may serve to arrest his moral development at any point and make a criminal of him; if beneficial and proper, may make him an honourable man. So long as we neglect to group and classify normally acting man as to his mental characteristics on the one hand and his cranial, facial and other physical features on the other—not in the fanciful mode of Lavater, but accurately and scientifically—so long cannot we venture to deal with him who is acting abnormally. By all means let us store up facts, but let us make no attempt at a deduction until we are certain that we have them all.

Professor Jelgersma accepts and expounds all the doctrines of Lombroso as to the signs and symptoms of criminality with the exception of his theoretical teaching as to criminal atavism. Jelgersma regards the criminal not so much reversionary in type as "a dysharmonic development from the normal." What, we wonder, is Professor Jelgersma's opinion of Lombroso's doctrine as to the affinity of crime and genius with epilepsy? Professor Winkler in like manner unhesitatingly subscribes to Lombroso's

teachings, and strikes out quite a new departure in scientific medical investigation by calling to his aid the services of a noted mathematician to whom he refers the duty of calculating from the skull measurements he has made of fifty murderers (subjects, the most ardent criminologist will acknowledge, the least likely to present constant "degenerative signs" of value), as compared with the skull measurements of fifty unconvicted persons (another fallacious factor, for any one of these might become a murderer to-morrow), a most entertaining mathematical formula, grounded on the theory of probabilities, from which the readers of this Journal will be pleased to gather that "the chances are 400 to 1 that in a recruit the smaller frontal horizontal measurement will be greater than in a murderer"—certainly a most noteworthy, highly profitable and valuable result. Futile ramblings such as these surely require a rebuke from "the master," similar to that inflicted on Max Nordau for his ingeniously farcical publication entitled "Degeneration."

Has it never occurred to criminal anthropologists to attempt a more rational explanation of the main peculiarities of the criminals they study, and out of whom they make so much literary capital, than to classify their minor abnormalities as evidences of degeneracy? Slang and secret symbols may surely be regarded as elaborate protective measures on the part of the criminal to avoid detection—his abnormalities of handwriting may surely be due to his inefficient or perverted education, his sensory insufficiency and his moral deficiency may be but the results of a neurotic acquirement through years of evil thinking, evil doing, and evil association—we cannot be at all certain that such things are not so, and boldly to assert the contrary without a shadow of proof, and to assume that therefore the criminal is a mental degenerate, and as some even venture to affirm, an irresponsible being who requires moral education and not punishment, all these may be very pleasant as airy theoretical speculations, but they are neither scientific nor logical. The influences of evil education and evil environment are put in the background, to the greater prominence of a speculative condition which for all we know may be but a result and not a cause of his abnormal conduct. So long then as we are unable to satisfy ourselves with the sufficiency of their premisses may we be permitted to hesitate—our hesitancy implies not indifference but merely caution; we know but too well how eager our continental friends, and notably those of Italy and Germany, are to draw large and sweeping inferences from the probably accidental similarity of a few cases, and we fear their minds are but too easily led into self-satisfying conclusions. This is a feminine trait of which they should endeavour to rid themselves, biding in patience for the reputation they are endeavouring to establish as the pioneers of a new science.