

In three cases of severe anæmia with brain pressure there was much improvement after the puncture. In one case of uræmia there was a transitory improvement, but none in another case. No ill effects were noticed in any case excepting one of brain tumour, in which severe pain in the head occurred after the puncture.

V. Ranke (*Münch. med. Wochens.*, Sept. 21, 1897) has used lumbar puncture in twenty-five cases, nineteen of which were tuberculous meningitis. In no case did the puncture produce a cure, and death finally occurred in all the cases of tuberculous meningitis. In a few instances temporary improvement occurred when the disease was in the early stage. Bacilli were not always found. The differential diagnosis by puncture between tuberculous meningitis and that secondary to ear disease is not always easy. In tuberculous meningitis the fluid drawn off was clear, usually colourless, but occasionally slightly green or yellowish; the specific gravity was 1010 and the amount of albumen was from 1 to 1.5 *pro mil.* Traces of sugar were present. Usually about 20 to 30 c.cm. were drawn off, and the pressure was high—160–300 mm. of water. No bad effects were noticed.

Stoeltzner (*Berl. klin. Wochens.*, April 19, 1897) gives the case of a child, aged two and a half years, in whom meningitis was due to the meningococcus intracellularis. Fluid, turbid with pus, was drawn off by lumbar puncture, and recovery ensued. The chief symptoms were rigidity of the neck muscles, retracted abdomen, persistent vomiting, and hyperæsthesia. The puncture showed that the disease was a suppurative meningitis, and that the only form of such disease lasting thirty-three days and ending in recovery is the epidemic form. Three hot baths a day were given in this case. The diplococcus was found microscopically, and the organism was present within the cells in characteristic colonies. Artificial cerebro-spinal meningitis was produced in susceptible animals, and the micro-organisms were recovered from the lesion.

IV.—THE TREATMENT OF TETANUS.

Comparatively few cases of tetanus treated by antitoxin have been published during 1898. Those given below seem to support the view that tetanus antitoxin has a distinct value, especially in those cases which have not a very short incubation period, and where it is given as soon as possible after the symptoms have commenced.

Heddaeus (*Münch. med. Wochens.*, Mar. 29, 1898) mentions one case of tetanus of moderate severity in which antitetanus serum appeared to be of service, and then he gives two cases of

severe head-tetanus, in the first of which the symptoms commenced on the fourth day after injury. The serum was at once injected into the veins of the arms, and repeated five days later, and the case recovered. In the second case the symptoms commenced on the fifth day. On the sixth day the wound was thoroughly excised, and a solution of 5 per cent. carbolic acid was applied. The tetanus antitoxin was injected on the seventh day, but the patient died on the following day. Here the serum was evidently used too late. Heddaeus considers that Behring's serum is an efficacious remedy of a specific character, and should be used at the earliest possible moment. The early destruction of the infected area must not be omitted, as from it a permanent supply of toxin is provided. The symptomatic treatment with sedatives and narcotics should also be used, and other means of eliminating the poison should not be neglected.

Steiner (*Wien. klin. Wochens.*, 1897, No. 36), in mentioning a case of severe tetanus, in which the patient was apparently moribund on the sixth day after injury, and where great and immediate relief followed the use of antitoxin, says that he thinks the judicious use of antitoxin will cure cases which would not get well spontaneously. The seat of infection should first be disinfected, preferably with an iodine compound, such as iodoform; then large quantities of fluid should be given with the object of washing the toxins out of the organism; next physiological antidotes, such as chloral, morphine, and bromides, should be administered; and, finally, antitoxin should be injected.

Weischer (*Münch. med. Wochens.*, Nov. 16, 1897) reports two cases of tetanus treated with Behring's serum. In one case the symptoms came on two days after injury; the second case was apparently idiopathic. Both cases recovered. The author has collected ninety-eight cases treated with serum, and of these fifty-seven recovered.

Engelmann (*Münch. med. Wochens.*, 1897, Nos. 32, 33, 34) records three cases of tetanus, two of which were treated by Tizzoni-Cattani's antitoxin, and one by Behring's new serum. In the first case, symptoms commenced seven days after injury; in the second case, which was apparently idiopathic, the symptoms were still very severe six days after the onset; in the third case the symptoms commenced nine days after injury, and large doses of Behring's serum were used. In none of the cases was an unpleasant effect produced. The author gives a table of thirty-four cases treated by Tizzoni-Cattani's serum; in seventeen of these the incubation period was from one to ten days, and five cases died, the usual mortality in such cases being 90 per cent.; of the

twelve which recovered, only five appeared to be unfavourable, from the rapid development of the symptoms. In cases with an incubation period of more than ten days the prognosis was more favourable, but, in several, rapid appearance of severe symptoms showed the disease to be very serious. In twenty-one cases rapid improvement followed the serum treatment, but in three cases it was only temporary. In five cases there was no improvement, and death resulted. Of thirteen cases treated by Behring's serum, six died, but of five cases treated by Behring's new serum only one died.

V.—PARALYSIS AGITANS.

1. New symptom in paralysis agitans.

Moczutkowsky (*Neurol. Centrabl.*, 1897, p. 96) draws attention to the fact that when a patient suffering from paralysis agitans is told to wrinkle the forehead, and to keep it wrinkled for one to two minutes, the folds persist for forty to sixty seconds after the muscular effort has ceased, and in spite of efforts on the part of the patient to efface them. This is due to the peculiar rigidity of the muscles in paralysis agitans, and is easily perceived in the forehead, because of the thinness of the muscular layer and its superficial position. In one case the same peculiarity was seen in the orbicularis oculi, and the patient had great difficulty in opening the eyes after they had been closed. In one case there was no tremor, but only muscular rigidity, and by means of this sign early paralysis agitans was diagnosed.

2. Ætiology and treatment.

Erb (*Zeitsch. für prakt. Aertz.*, 1898, No. 5) points out that paralysis agitans is a disease of age, seldom coming on before fifty years. Heredity plays a moderate, but syphilis no part in the ætiology. Psychological influences are of the greatest importance in the origin of the affection. The position of the lesion must be in the brain, perhaps in the brain stem in the neighbourhood of the motor cortex. A certain and constant anatomical cause for the paralysis is not at present known. The prognosis is bad. Treatment consists in regulating the diet and mode of life, and in internal treatment by arsenic. Electricity in the form of the faradic bipolar bath and mild hydrotherapy are useful. For the tremors and stiffness, hyoscin hydrobromide in doses of about $\frac{1}{200}$ gr., once or twice daily, should be used; or duboisin in the same dose may be of service. The vibrating chair of Charcot is not recommended.

Krafft-Ebing (*Med. Chron.*, Oct. 1897, p. 24) says that cases have been recorded which tend to show that the symptoms of

paralysis agitans are associated with a perivascular sclerosis, chiefly in the cervical and lumbar enlargements, and in the posterior and lateral columns of the spinal cord. He refers to the analogy between senile changes and those of paralysis agitans. In some cases tremor exists for years before the rigidity sets in; on the other hand there are cases in which rigidity appears before the tremor; sometimes fright and shock appear to play a part in the ætiology of the disease, though there must also be some predisposition. Krafft-Ebing states that he has met with many cases in which paralysis agitans suddenly followed an injury to a limb. The disease generally commences in one arm, it next extends to the leg on the same side, and then the opposite side is affected. The disease is inclined to remit, but is always progressive in the end. The tremor is slower than that of alcoholism or Graves's disease, and the deep reflexes are always increased. He believes that as a symptomatic remedy, morphine will be found to be of greatest value by checking the tremor, relieving the rigidity, inducing sleep and giving comfort to the patient. He prescribes a pill, containing arsenic, extract of cannabis indica, and opium.

3. Duboisin sulphate.

Francotte (*Neurol. Centrabl.*, 1897, p. 423) has used duboisin sulphate in four cases of paralysis agitans, with good results. He finds the drug has a real influence in checking the tremor, but the results were only of short duration, and after two or three days the effect passes away. The muscular rigidity was less influenced, and the drug had no effect on the weakness and pain. Bad effects were only observed once (after a large dose). He gave the drug in granules containing $\frac{1}{10}$ gr. three to six times a day.

VI.—CHOREA.

1. Ætiology.

Marfan (*Sem. Méd.*, July 30, 1897) found that out of seventy-six cases of chorea forty-nine had an hereditary history of neurosis, and eleven had alcoholic parents. Chorea was almost invariably a secondary disease. About half the cases were secondary to acute rheumatism, but in forty-six cases no rheumatic history could be obtained, and in twenty-eight cases the chorea had been almost immediately preceded by specific febrile diseases, tuberculosis, local suppurations, etc. In nineteen cases the neurosis appeared to be primary. He believes the condition to be a neurosis produced by various toxins or micro-organisms. He divides the cardiac affections in chorea into (a) ephemeral disturbances not accompanied by any lesion, in which there is hyperkinesia, arrhythmia, and irregularity or inequality of the heart-beat, these being due to true

chorea of the heart muscle; and (b) endocarditis or pericarditis, which only occurred in fourteen out of seventy-six cases. He considers that the three great remedies are rest, arsenic, and antipyrin.

2. Belladonna and arsenic.

Overend (*Lancet*, July 31, 1897) states that belladonna appears to be most beneficial in recent cases of chorea, and its influence is sometimes very great in the severer forms. In obviously rheumatic cases arsenic in large doses may be given a trial, or may be combined with belladonna from the first. Belladonna may act by diminishing the excitability of the nerve centres, or by imparting an improved tone to their vascular supply. In hospital it is quite justifiable to give a child as much as 30 minims or more of the tincture of belladonna every four hours for ten days, or even longer; but certain precautions are necessary. The patient should be kept in bed, and the urine daily measured. Small doses of potassium acetate may be added if the urine becomes too much diminished, or if the eyelids show any puffiness. The occurrence of papular erythema, which leaves circular lumps for a time, does not necessitate any diminution of the dose. Dryness of the throat and swelling of the parotids, if they appear, are merely temporary. The influence of the belladonna makes itself felt after about four days. Should no visible improvement occur before the tenth day, it is useless to continue the belladonna. As soon as the movements become trivial, or occur only during exertion, it is better to omit the belladonna, to commence massage of the affected muscles, and administer cod-liver oil and syrup of phosphate of iron, or other tonics. The arsenic may be continued for a week or longer.

VII.—MENTAL DISEASES.

1. Mental symptoms in brain tumour.

Gianelli (*Il Policlinico*, July 15, 1897), in speaking of the mental symptoms of brain tumour, says that if hallucinations are present, they indicate irritation of the corresponding cortical sensory centre. The more prominently such psychical disorders as torpor, intellectual arrest, and weak memory assert themselves, the more likely is the growth to be in the frontal or prefrontal lobe. Tumours situated in other parts of the brain, as a rule, only give rise to psychical symptoms at a later period. Tumours of the corpus callosum are always accompanied by psychical symptoms. No clue as to the seat of the growth can be had from modifications in the patient's feelings and emotions. Cerebral growths manifesting themselves as progressive paralysis

probably have their seat in the frontal lobe, as is also true when ideas of grandeur come on in the course of the growth of the tumour. Apparently the nature of the tumour has no influence on the production of psychoses. According to the author's figures, cerebral growths are most often sarcomatous (129 cases), then gliomatous (79), and tuberculous (69). Out of a total of 323 various tumours accompanied by psychical symptoms, 77 were in the frontal lobe as against 20 out of 265 unaccompanied with psychical symptoms.

2. Syphilis and general paralysis.

Mott, in his 1898 report to the Asylums Committee of the London County Council, points out that in many cases of general paralysis there was usually a history of venereal infection, particularly in those cases of the tabetic type in which the dementia in the early stage was very slight. Lewis, of Claybury Asylum, investigated this point, and found that out of a total number of 200 males suffering from all forms of mental disease admitted to Claybury in 1897, 70 had suffered from venereal infection (including both soft and hard sores). Of these 200 cases 24 were general paralytics, and in 16 of them there were certain evidences of infection, doubtful evidence in 3, and no evidence in 5. Alcoholism was relatively infrequent as a cause. In 10 cases of juvenile general paralysis which Mott saw there were undoubted signs of congenital syphilis (Hutchinson's teeth, linear cicatrices, or interstitial keratitis) in no less than 8. Again, he found that atheroma of the aorta was comparatively frequent in general paralysis. Of 86 males dying under forty-six years of age, 24 had atheroma of the aorta; 60 of these cases were general paralytics, of whom 22 had atheroma, or 1 in 3, whereas the proportion was 1 in 13 for the other cases. Of 53 females dying under forty-six, 18 had atheroma; 18 of the cases were general paralytics, and of these 10 had atheroma, or more than half. Other statistics from Banstead Asylum also showed clearly that atheroma of the aorta is much more common in persons under forty-six who have suffered from general paralysis than from other diseases. It must, of course, be remembered that eminent authorities regard syphilis as the most important cause of atheroma of the aorta.

3. Bed treatment of insanity.

Magnan (*Rev. de Psychiatr.*, 1897), in the treatment of mania, recommends no restraint and rest in bed, except when the strong-room is absolutely necessary. Baths, bromide and chloral, may be given, but for severe excitement or great sleeplessness an injection of hyoscine is necessary. Good nourishment

should be given, but no beer, wine, or spirits. Baths at a temperature of about 33° C. were given for two to five hours as a means of quieting the patient, with cold compresses to the neck. When the excitement is very great, instead of the baths a damp sheet should be used. In the evening 45 to 75 gr. of bromide of potassium are given, and two to three hours later 30 to 45 gr. of chloral. After ten days, if the patient is quieter, the bromide is lessened and the chloral is only given occasionally, and sulphonal or trional is substituted. Where bromide and chloral are useless, laudanum in increasing doses is given. He does not recommend morphine; hyoscine was given in doses of $\frac{1}{60}$ to $\frac{1}{45}$ gr. by injection.

Trapesnikow (*Neurol. Centralbl.*, 1898, p. 142) treated twenty-nine male patients, including eight general paralytics, six cases of amentia, five of melancholia, four of paranoia, and one each of katatonia, psychosis hysterica, senile dementia, and cerebral syphilis, with complete rest in bed. The patients soon got used to being in bed, and during the time the number of sleeping hours day and night was increased, often, however, to the disadvantage of the night sleep. The weight of the patient usually at first fell, but increased again after some weeks. No influence on the pulse or breathing was noticed. A greater opportunity was given to masturbators by this method of treatment. As regards the duration or cure of the disease, the author thinks that bed treatment has no influence.

Ossipow (*ibid.*), dealing with female patients treated by rest in bed, had three cases of secondary dementia, one of chronic paranoia, two with chronic hallucinations, two with amentia, one each with maniacal exaltation, melancholia, circular insanity, periodic insanity, and organic cerebral dementia. The majority of the patients easily got used to the treatment, and the nursing was more easily performed. In some patients good resulted, but not in all. Weight was often lost, and sleep, appetite, and the action of the bowels were all prejudicially interfered with, and hypnotics had to be used just as frequently. He concludes that bed treatment is only useful for individual cases.

Sérieux (*Rev. de Psychiatr.*, 1897, No. 8) on the contrary strongly advocates bed treatment in acute psychoses, especially in melancholia, and points out that Hayem has shown that during rest there is less destruction of the red blood corpuscles.

4. Duboisin sulphate.

Skeen (*Journ. Ment. Scienc.*, July, 1897) gives duboisin sulphate, by the mouth, and also hypodermically in doses of $\frac{1}{100}$ to $\frac{1}{32}$ gr. Hypodermic administration is best, and has fewer bad

consequences. Within fifteen to thirty minutes after an injection the pupils are dilated, the face is flushed, the heart's action is more rapid, the pulse is soft, the speech thick and slow, or if the dose is large, the patient is inarticulate; the mouth and throat are dry, the gait is ataxic, and the general appearance is as if drunk; the excitement soon passes off, and is followed by drowsiness and calm, and then sleep, which lasts from three to ten hours, comes on. No recurrence of excitement is seen when the patient is roused, but only dryness of the throat, impairment of vision, and slight headache. If given internally there is impairment of appetite, and a tendency to faintness and vomiting. Continuous administration is not successful, though the patient is quieter while under the influence of the drug; marked ataxia is present, and sometimes hallucinations of sight and hearing; loss of weight rapidly sets in, but is soon recovered from. Skeen used the drug in all cases of excitement; in acute mania its use was not followed by any beneficial results; single doses produced quiet for a time, but this was followed by more excitement. In delusional mania it was only used for outbursts of excitement, and was entirely satisfactory. In general paralysis the drug was used both occasionally and continuously with satisfactory results. In epilepsy it is not of much use, and its action is uncertain, as only some cases of epileptic excitement were relieved. It does not alter the frequency of the fits. In melancholia bad results were seen; in no case was there any relief, and in some cases the excitement was increased, and there was a tendency to syncope, with hallucinations of sight and hearing. Used occasionally in dementia it gave satisfactory results, with rest at night. The dangers of the drug are cardiac failure, if given continuously; in one case of acute mania, in which a large dose had been given, there was a slight convulsive seizure. It should be used only in physically healthy persons. On the whole, Skeen thinks the drug is preferable to hyoscine or hyoscyamine, as the quiescent state induced is of longer duration, and there is less prostration.

5. Hyoscine hydrobromide.

Doerner (*Therap. Monatsh.*, June, 1898) prefers the hydrobromide of hyoscine to the hydrochloride, on account of its milder action and greater freedom from unpleasant effects. It is given in doses of $\frac{1}{8}$ to $\frac{1}{70}$ gr. In cases of mental excitement with delirium and destructive tendencies, and especially in periodic mania he finds it of great value, and he confirms the statement made with regard to its value in the delirium of alcoholics. In melancholia agitata as well as in other cases of sleeplessness, hyoscine often produces quietude when all other means fail. On

the other hand it is not adapted for all cases of a hysterical nature, and especially in affections which require a constant use of sedatives. The only unpleasant effects are dryness in the throat, disturbance of vision, and more rarely a bad effect on the heart, but it is possible, if continually taken, that nutrition may somewhat fail. Marked valvular trouble and fatty heart contra-indicate hyoscine.

6. Scopolamine.

Tomasini (*Brit. Med. Journ., Epitome*, 1897, Dec. 4) points out that scopolamine is isomeric with cocaine, and has an action somewhat similar to that of hyoscyamine. In hypodermic doses of $\frac{1}{250}$ to $\frac{1}{75}$ gr., it proved a good hypnotic in paroxysmal excitement, but not in habitual insomnia. It produced a calm and quiet, natural kind of sleep, and was not followed by unpleasant effects. Patients soon get accustomed to the drug and require larger doses; it has no influence in modifying attacks of epilepsy, but is especially useful in acute mania.

7. Lactophen.

Cristiani (*Rif. Med.*, June, 1898) has given lactophen for insomnia in over 200 cases, with very good results. The dose given varied from 15 to 45 gr., the drug being administered in some sweet emulsion. Sleep that had all the characters of a natural sleep, followed in a very short time, lasted for four to nine hours, and was not succeeded by any bad effects, such as stupor, morning headache, or gastric disturbances. Like most hypnotics, it loses its effect after continued use, but after a short intermission can be used again with good results. The author used the drug in all kinds of mental cases, and in different physical conditions; for example, in cardio-vascular, kidney, and other diseases. He considers it quite safe and more generally useful—in insane subjects—than opium, chloral, trional, or other hypnotics. As it has neither taste nor smell it is easy to administer.

8. Thyroid extract.

Bijl (*Neurol. Centralbl.*, 1898, p. 711), as a rule, found no benefit from the use of thyroid extract in paranoia or katatonia; yet in one case of katatonia, in a man aged forty-five, there was a quick response to the drug as regards the bodily functions, and final recovery in two months.

Gerwer (*Neurol. Centralbl.*, 1898, p. 712) gave thyroid extract to ten insane patients, commencing with doses of 2 gr. twice daily, gradually increasing to 10 gr. three or four times a day. Only two cases—namely, one of melancholia and one of paranoia with acute hallucinations—showed any improvement, and even in these Gerwer thinks that a similar improvement might have taken

place without the drug. Of the remaining eight cases, which included two of melancholia, three of acute dementia, and one each of circular insanity, dementia from organic brain disease, and epilepsy with choreic contractions of the limbs, no improvement was seen. Bad effects were, however noticed, such as increased pulse-rate, loss of weight, twitchings in the facial muscles, disturbances of the gastro-intestinal tract, and salivation.

VIII.—MISCELLANEOUS.

1. The treatment of infantile paralysis.

Larat (*Journ. de Méd.*, July 25, 1897) says that, however grave, infantile paralysis should be treated by electricity as soon as the diagnosis is made. Faradisation is not only useless, but is harmful, as it increases the tendency to atrophy of the muscles. He uses the continuous current in the following painless manner:—A disc of tin covered with chamois leather, as large as the palm of the hand, is moistened with tepid water, not salt solution, and placed over the cervico-dorsal region in the case of upper lumbar paralysis, or over the dorso-lumbar region in the case of lower lumbar paralysis; this is connected with the positive pole of the battery. The negative pole is a small disc placed in a basin of tepid water, in which the extremity of the affected limb is immersed up to the wrist or ankle, as the case may be. A current of about 10 milliamperes is passed for about ten minutes. After ten minutes the current is interrupted a few times and reversed; the interruptions should not exceed 100, and should be made slowly. Later, when the disease is subsiding, the number of interruptions may be increased, and the interval between them shortened. The treatment requires great patience, and no good result will appear for some time; the slightest cases will require treatment for a year, and severe cases for several years. The author believes that side by side with the anterior horn cells which are destroyed are other cells, which by this treatment take on the work of the destroyed cells.

2. Trigeminal neuralgia and its treatment.

Böttiger (*Neurol. Centralbl.*, 1897, p. 1020) divides pains in the region of the fifth cranial nerve into neuralgic, neuritic, psychical (hysteria), and rheumatic. He especially points out the differences between the first two branches of the nerve as regards ætiology. Whilst the neuritic pains particularly come on in the course of constitutional toxic and infectious diseases, the neuralgias are chiefly due to local causes, such as cold. The cure of genuine neuralgia is principally symptomatic; he alludes to

hygienic, dietetic, medical, physical, and mechanical treatment, including electricity. He concludes that by these means recent neuralgias of the fifth nerve, when affecting young people, may be cured, but that if of long standing, or in old people, an operation is necessary.

Bruns (*ibid.*) also pointed out that genuine tic douloureux affecting old people was situated in the second and third branches of the fifth nerve, and not in the first, and that there are in these cases severe reflex spasms in the region of the seventh nerve; eating and speaking may bring on an attack. He also agrees that surgical treatment is necessary.

3. Pyramidon as an analgesic.

Donat Roth (*Wien. klin. Wochens.*, 1897, No. 44), used this drug, which is a dimethylamidoantipyrin, for the pain of migraine, cephalalgia, neuralgia, tabes, and polyneuritis. The analgesic effect was noticed by Filehne. In five cases of migraine somewhat large doses of $7\frac{1}{2}$ gr. per day, given either before or at the beginning of an attack, always were of service. In a case of neuralgia of the fifth cranial nerve, which had lasted for several weeks, and in which no treatment had been of any avail, a quick recovery was brought about by pyramidon; one patient with sciatica was relieved, but another not. In a case of tabes, weak attacks of gastric crises with pains and vomiting could be relieved. Also the calf pains in alcoholic neuritis and the headache of nephritis were relieved. It was of no use in nervous tachycardia. No bad after-effects were noticed.

4. Mercury in multiple sclerosis.

Mühsam (*Neurol. Centralbl.*, 1898, p. 666) reports ten cases of multiple sclerosis in which he used mercurial inunctions. In four cases there was a considerable improvement in the general condition, in four more cases an improvement of single symptoms, and two cases were entirely uninfluenced. Sensory disturbances, if present, as well as pain in the head and dizziness, were lessened.

5. The treatment of hemiplegia.

Huchzermeyer (*Deut. med. Wochens.*, 1898, No. 1) points out that all cases of hemiplegia show a stationary condition of the extremities with recovery of the facial and swallowing muscles, as well as considerable pain on passive movement of the affected limbs. These evil conditions are due to the fact that regular passive and active movements are not undertaken as soon as possible. The diet of these cases must be lessened if plethora exists. If the mind is unaffected, one begins with passive movements of the paralysed and active movements of the sound limb.

These movements should be performed twice daily for half an hour. Every week four or five strong salt baths at about 90° F. should be given, and as soon as possible the patient should be sent to a brine bath in which the water also contains carbon dioxide. The baths give the patient the possibility of making slight voluntary movements perceptible two or three months earlier than without them, as the heavy fluid raises and supports the paralysed limbs. A "go-cart" is also an excellent means of obtaining exercise for the paralysed limbs. The author thinks that electricity is of little service.

6. Percussion in the diagnosis of cerebral disease.

Paoli and Mori (*Il Policlinico*, Feb. 15, 1898) record an extensive series of observations on the value of percussion in intracranial disease, with an account of the results obtained by percussing the normal skull. If the hair is thick the head must be shaved, and it is better to practise with the finger directly on the surface. The authors recommend a division of the cranial surface into three symmetrical parts—frontal, parietal, and occipital—and in each of these regions there are constant points, so that the note of one side may be compared with the corresponding note on the other. In the case of the frontal and occipital regions there are median points as well.

They found that a dull note is obtained but seldom, the rule being a high degree of resonance with well-marked differences, according to the position percussed. The results vary with age and sex and with the density of the skull-cap, and the sense of resistance varies in different instances. Thus in boys under ten years of age there is a very notable resonance in the note, more particularly in the temporal and parietal regions, while in some portions of the frontal-region (more particularly over the sinus) and in the occipital region the note is fairly dull. In boys who have rickets the note is still more resonant, and sometimes a cracked-pot sound is perceived. In women there is more resonance than in men, and in adults, as a rule, the sound is less resonant than in children. But in advanced age in women there is considerable diminution of resonance, while in old men the resonance is much more marked than earlier in life.

In disease, the first case examined was a boy suffering from epilepsy, who had fractured his frontal bone by a fall. Percussion showed marked dullness all over the portion corresponding to the fracture. The patient was trephined, and thickening of the dura mater was discovered, with a large layer of hæmorrhagic infiltration in the form of a hæmatoma, and exactly corresponding to the

area of dullness. Several other cases of fracture gave similar results. In another case, in which, after injury to the right occipital bone, there was paralysis of the right arm and hand and loss of speech, there was marked decrease of resonance over the left parietal bone, and there was an improvement in the symptoms coincident with a return of the resonance over the left motor area.

7. The localisation of cerebral tumours.

Bruns (*Wien. klin. Rundschau*, 1897, No. 46) points out the difficulties of diagnosis of cerebral tumours, and gives some supplementary means of diagnosis. Thus disturbances of equilibrium characterise tumours both of the frontal lobe and cerebellum, often causing confusion in localisation. In most cases, however, careful examination of the general and local symptoms will establish a diagnosis, these being often markedly different. Homonymous hemianopsia is of little value in the topical diagnosis of tumours; if, however, right homonymous hemianopsia is from the beginning associated with alexia and word blindness, a tumour in the white matter of the left occipital lobe can be inferred. The localising symptoms of tumours in the neighbourhood of the central convolutions, particularly in the frontal and parietal lobes, are often difficult to diagnose from those of the motor area itself. In such cases Bruns especially recommends the method of percussion of the skull, which greatly facilitates local diagnosis when the conjectured seat of the brain lesion agrees with the evidence derived from percussion. Markedly localised tenderness and tympanic note are scarcely possible, except when the tumour is at least in the neighbourhood of the cortex.

DISEASES OF THE STOMACH, INTESTINES, AND LIVER.

By HERBERT P. HAWKINS, M.D., F.R.C.P.,

Physician to St. Thomas's Hospital.

The present direction of the advance in treatment.

The year 1898 has not been marked by any great innovation in the treatment of disease of stomach, intestine, or liver. Worthy of record, however, is the complete and successful removal of the stomach by Schlatter (*Correspondenzblatt für Schw. Aerzte*, Dec., 1897), a case which, apart from its startling novelty, has furnished some information as to the process of digestion. The operation was undertaken on account of a malignant growth, which had invaded so large a part of the wall of the stomach that gastro-enterostomy was out of the question. The œsophagus was connected to the jejunum by interrupted silk sutures in the mucosa and Lembert sutures in the peritoneal coat. The patient, a woman aged fifty-six, was fed at first by the rectum, but, as the enemata were not retained, mouth-feeding was begun on the second day. At the end of the third week she ate half a chicken. In the first two months she gained about 9 lb. in weight, and four months later she was found to be 20 lb. the heavier. Hoffman (*Münchener med. Wochenschr.*, 1898, May 3) reports some interesting observations on the metabolism of the patient. He shows that a nitrogenous balance can be established without the aid of the stomach, that fats are disposed of, that no intestinal putrefaction occurs (though gastric juice is absent), and that the usual decrease in the chlorides of the urine after a large meal no longer occurs. Schlatter is inclined to minimise the importance of gastric as compared with intestinal digestion, and thinks that one of the chief functions of the stomach is that of a reservoir, which prevents the intestines from being overloaded. At any rate, it is now clear that intestinal digestion is by itself sufficient for the maintenance of nutrition.

Though no great advance in treatment can be recorded apart from this noteworthy example of modern surgery, there are certain subjects which occupy a prominent position in the