By the rather vague term "constitutional" asthenia* is meant an inferiority or anomaly in the assemblage of inherent characteristics, both functional and morphologic, which go to make up the organism. Among the constitutionally asthenic we include those who have always been short of breath, have been unable to play the more strenuous games or keep up physically with the average of their fellows, have fainted or become dizzy easily, have blushed readily, perspired too profusely, and have suffered from cold extremities. There appear to be two types of such individuals—first, those who are weak and poorly built, or may have a "habitus"; and, second, those who to all appearances are muscular, strong, and robust, and yet for some unknown cause have had symptoms such as dyspnoea on exertion from youth up.

One may also include under this term patients who have a habitus, such as the narrow-chested or splanchnoptotic, those who have given evidence of a diathesis such as the haemorrhagic, the exudative, the lymphatic or the spasmodic, and those having a dyscrasia or belonging to certain types such as the vagotonic, angiospastic, erethistic, feminine, eunochoid, etc., or those showing definite evidence of disturbance of the endocrine organs. Attention has been directed for many years to this whole question of constitution by F. Kraus; it is impossible to enter into the subject here, but it must be emphasized that, apart from neuropsychic factors, there is a constitutional tendency in certain individuals which predisposes them to the development of the "irritable heart" syndrome.

Juvenile or Developmental Vaso-neurotics.

From a study of the personal histories, it is believed that many cases of "irritable heart" of soldiers are the mature individuals who during their developmental period presented vaso-neurotic symptoms. Of the 46 cases in Group I, 32 cases (70 per cent.) showed symptoms of constitutional physical asthenia before the age of 17. Of these, 13 had symptoms as long as they could remember. Of the remaining 19, the age at which symptoms of constitutional weakness first manifested themselves ranged from 8 to 16, at an average of 11.8 years for those who could recall approximately their age when the symptom or symptoms appeared. (Two other patients dated the appearance of their symptoms to their twenty-second and twenty-third year respectively, but as the symptoms appeared so late, it is not certain they belong to the same group.)

Apparently hitherto no attention has been paid to a very important fact, that a syndrome identical with that of "irritable heart" occurs not infrequently in children² especially associated with orthostatic albuminuria.³ These symptoms usually arise in children at the school age, 8 to 14, and are "chiefly those referable to the cardiovascular system, namely, dyspnoea on exertion, palpitation, precordial pain, headache, fainting, hypersusceptibility to cold."

It seems highly probable to us, therefore, that the adult cases of "irritable heart" which give a previous history of similar symptoms at the prepuberty age, or as far back as they can recall, have been children who are then recognizable as suffering from "vaso-neuroses," "dilatative weakness," etc.

Difference in Symptomatology of the Two Groups.

In comparing the symptoms in the two groups of cases—that is, those cases with and those without psycho-neurotic factors in their family and personal histories—it is noteworthy that, in general, soldiers in Group I complain almost invariably of chest pain among their other symptoms—indeed, these patients are apt to "stick it" until pain develops, then they become alarmed and report sick. Patients of Group II rarely complain of chest pain, but suffer more from exhaustion and weakness; they are "done up," to use their own expression. One case may be cited belonging to Group II which illustrates that an acute infection may be the cause of the "irritable heart," that these symptoms may then disappear and leave simply

exhaustion. The patient referred to broke down after prolonged service and trench fever with breathlessness, which disappeared after a fortnight, leaving him with weakness, exhaustion, and nervousness, but no dyspnoea or pain. The post-infectious cases of "irritable heart" are more apt to present exhaustion symptoms and only exceptionally pectoral pain.

There is perhaps a certain parallelism between these two groups of "irritable heart" and cases of war neuroses. If we understand Dr. Rivers correctly, certain cases of shell shock result in repression neuroses, the anxiety neuroses, while those resulting from exhaustion or infection manifest themselves as *exhaustion* neuroses (neurasthenia). Similarly, in a general way among cases of "irritable heart" there are those belonging to the constitutional group, who suffer from chest pain, etc., and those who belong to the exhaustion or the post-infectious group, who have fatigue symptoms, but rarely much pain.

REFERENCES.

¹ Julian M. Wolfsohn, *Lancet*, 1918, xciv, p. 177, and *Journ. Amer. Med. Assoc.*, 1918, cxx, p. 305. ² Martius, *Kong. f. Inn. Med.*, 1899, iii, p. 41. ³ Bass and Wessler, *Arch. Int. Med.*, 1913, xi, p. 403-417. (This paper gives the references to the literature on the subject.)

THE CHEMOTHERAPEUTIC TREATMENT OF GONORRHOEA.

BY

J. E. R. McDONAGH, F.R.C.S.

In two previous articles¹ I have described the action and use of colloidal manganese in gonorrhoea, and shown that this drug was most efficacious in the acute stage. As every day lost before commencing treatment is important, and as there is some delay after injecting manganese before its maximum oxidizing power is reached, it occurred to me to precede manganese by a metal, which would act instantaneously by dissociating certain hydrogen and hydroxyl groups in the serum. For this purpose I used a colloidal preparation of palladium, which is now known as "pallamine."* Palladium has the action of liberating the hydroxyl group (OH) from H.OH and temporarily fixing the hydrogen group (H). The moment the discharge appears 0.5 c.cm. pallamine should be injected intramuscularly, and the same dose repeated two or three days later. In some cases a third injection may be given, but no more than three, because the disease is sure to be aggravated. This aggravation is probably due to the liberation of the temporarily adsorbed hydrogen, which increases the "acidity" of the serum or depresses the important hydroxyl (OH) ion concentration. Irrigations are carried on in the usual way, but the moment the discharge ceases to be purulent, zinc permanganate or zinc sulphate 1 in 10,000 should take the place of potassium permanganate.

Patients get well quicker on a milk than on an ordinary diet, and at present I am prescribing potassium nitrate or methylene blue internally, on the theory that the liberated hydrogen can be used by reducing the former to a nitrite and the latter to its leuco-base, two products less innocuous than hydrogen. When potassium nitrate is being taken sodium chloride should be eliminated from the diet as far as possible.

As to whether these two drugs really aid the cure I am not able to say, as to make sure would necessitate experiments carried over several months. If the case is not well by the sixth day, 0.5 c.cm. colloidal manganese should be injected intramuscularly, and repeated every second or third day until no sign of the disease is left. As a rule one to three injections are necessary. It is unwise to exceed the dose of pallamine above given, except in cases of recurrent purulent urethritis when other methods employed to stop the discharge have proved unavailing. In such a case 1 c.cm. can be injected with benefit. The injection of manganese at the same time as pallamine has not given good results, but injecting them alternately has proved efficacious, though it is not so good as injecting pallamine first and colloidal manganese afterwards. After the first injection of pallamine the discharge becomes thinner, although it may not diminish very much in quantity.

* In the British army "constitutional" is a term used on certain documents of the medical boards as an equivalent of the term "pre-enlistment"; a condition is termed constitutional if it existed before enlistment.

† We examined 30 unselected cases of "irritable heart" and found one with orthostatic albuminuria. Orthostatic albuminuria usually disappears at puberty, but may remain in adult life. We have observed Chvostek's sign repeatedly among soldiers suffering from "irritable heart."

* Pallamine can be obtained at Crookes's Laboratories, 50, Elgin Crescent, W.11.

After the second injection the discharge ceases or becomes muco-purulent. The cases which respond least to the treatment are those in which the discharge is very thick, profuse, and of a dark yellow, greenish, or brownish colour.

So far I have treated fifty cases of acute gonorrhoea (first attacks), with an average rate of stay under treatment of 8.5 days. One case relapsed, one case developed epididymitis, and two cases developed prostatitis. I have every reason to hope that when this treatment is perfected we shall be able to get rid of acute gonorrhoea cases in one week.

REFERENCE.

¹ *Practitioner*, January and May, 1918.

THE TREATMENT OF THE PREGNANT AND PARTURIENT WOMAN AND THE PREVENTION OF MATERNAL AND INFANTILE DEATHS.

SEVERAL circumstances during the last few weeks have combined to turn the attention of the profession as well as of the public to the need for improvements in current methods of providing for the health and welfare of the mothers of the country and their infants. During Baby Week an immense amount of good propaganda work was done, but such work necessarily involves the repetition of facts and arguments with which those who have given attention to the subject are well acquainted and with which all members of the medical profession are familiar. We do not propose to attempt to report the many meetings held and demonstrations given, but have selected two papers by medical speakers which contain suggestions of value to members of the profession.

NEONATAL LIFE—AND DEATH.

BY

DR. J. W. BALLANTYNE,
Edinburgh.

AMONG the subjects discussed at the annual meeting, named "Baby Week," of the National League for Health, Maternity, and Child Welfare, was that of the factors which go to produce infantile mortality. The subject was introduced by Dr. Ballantyne, who said that if all the work being done, some of which at least was rather outside strictly medical boundaries, was to result in a real and early saving of lives, maternal and infantile, it must be built upon sure and deeply-laid foundations. Dr. Ballantyne raised this aspect of the matter by asking what were the true causes of infantile mortality. Did babies die in the first year of their existence after birth on account of the impact of dangers then coming into play, such as a germ-laden environment and errors in feeding and housing and the like? Or did they die because of morbid influences which had been at work before birth and had acted mainly through the mother who was then the unborn infant's environment? Were both these factors, the post-natal and the ante-natal, at work, and were they in a measure reinforced by the events of birth itself, the intra-natal factor, as it might be called?

The Ante-natal, Intra-natal, and Post-natal Periods.

The fair conclusion seemed to be that the deaths after the first four weeks of life (the neonatal period) were mainly due to the truly post-natal causes, the zymotic diseases and the health errors, although the dangers arising from these causes were undoubtedly increased or lessened by what had occurred during and before birth. On the other hand, the deaths before birth, as compassed by abortions or seen in stillbirths, were, he believed, mostly caused by ante-natal conditions, and these, in so far as they were not due to the father, were maternal in origin. There was, however, another division of the stillbirths—that in which death only supervened during the act of birth, "the intra-natal stillbirths," and these were obviously due to purely obstetric happenings, disproportion between the size of the pelvis and the child, haemorrhages, etc. The three factors were distributed, therefore, mainly along these lines, the post-natal factor acting mainly after the first four weeks of life, the ante-natal acting chiefly before it, and the intra-natal being at work in the birth itself. Child

welfare work was concerned mainly with the care of the child after the first four weeks (after the neonatal period), whilst mother welfare work was concerned with the child as reached through the mother, before and during birth—that is, before the neonatal period. The two lines of work were allies, the one trying to repel the attacks of disease and death after the neonatal period was over, and the other defending the unborn child against them before it had begun. The allies were pediatrics and obstetrics, and the first four weeks of life constituted their point of contact.

The Neonatal Death-rate.

Dr. Ballantyne said that this junction would almost certainly be the spot where death's attacks would be most dangerous, and where consequently the health-forces' resistance ought to be strongest. It was, therefore, of immense importance that the state of matters at this junction should be closely scrutinized. In other words, there was need for an intensive study of the neonatal period of life, both scientific and statistical. With regard to the former it must be admitted that everything was not well. Life and death during the first four weeks of life were complicated; all the factors—the post-natal, the intra-natal, and the ante-natal—were at work in this fateful neonatal period, and physiology, pathology, and scientific medicine had not yet evaluated and analysed their respective influence. No one was familiar even with the actual deaths which occurred on an average in these four weeks. Statisticians grouped all the deaths in the first year of life together under the head of infantile mortality, and expressed it by the infantile mortality-rate—that is, the number of deaths per 1,000 live births which occurred in the first year of life. Dr. Ballantyne urged that the neonatal deaths should be separated from those of the remaining forty-eight weeks, and should be stated separately in all health statistics. From the Edinburgh figures, in which this separation had been made for a few years, he had calculated a new rate, the neonatal death-rate. By that was meant the number of deaths per 1,000 live births which occurred in the first four weeks of life. This new rate revealed many interesting features. One was its height. Instead of being, as it might possibly have been expected, one-thirteenth of the total infantile mortality rate, it was over a third of it, and in one year it had come within dangerous proximity to a half. Incidentally it was pointed out that the neonatal rate among the illegitimately born babies had in one year in Edinburgh been exactly double that among the legitimate (as 76 per 1,000 to 38 per 1,000), but in another year they had been the same. So that in this respect the neonatal rate was not behaving like the infantile rate—at least, it was not constantly following it.

It was obvious that the neonatal four weeks called for scrutiny from health workers and from scientific medicine alike, if only for the reason that so many babies died in them. Yet, as a matter of fact, little attention was paid to them. In courses of lectures on obstetrics and pediatrics, for instance, little space was given to the physiology and pathology of the newborn infant. Neonatal diseases lay between the two territories of the obstetrician and the paediatrician and ran the risk of being incompletely occupied by either. Yet they were most interesting weeks, for in them all the factors were seen in action—the post-natal, intra-natal, and ante-natal—and it would be of great value to disentangle these factors and give to each its value as a threat to life. To the complex group of morbid causes thus acting the name "neonatal factor" might be conveniently given.

If this new mortality rate (the neonatal) were supplied, the danger in the first four weeks would be made clear and some of its characters would be recognized. The neonatal period of life should be more carefully studied by the physiologist and the pathologist also. When these and other things springing from them had been accomplished mother and child welfare work would stand on much surer foundations and have greater hopes of striking successes. Already there had been a measure of reward for all the work doing, but, unless the foundations on which the propaganda was being built up were secure, disappointment with the immediate results might lead to discouragement, or, still worse, to discontinuance of effort. Good had already been accomplished and the work must go on, but it would go on all the better if the difficulties were fully known and appreciated.