temperature was 99° F., and the urine normal. Bacteriological examination confirmed the diagnosis of diphtheria.

Treatment.—Two thousand units of antitoxin were injected, and tinct. digitalis (mj) and tinct. ferri perchlor. (mij) directed to be given every four hours.

The child passed a quiet night and next morning (April 1st) seemed better.

Onset of Hemiplegia.—At 3.30 p.m. that day he had a slight attack of coughing; no whoop was heard, but a convulsion occurred which for some minutes looked serious, then gradually subsided. Soon afterwards it was observed that the lower part of the right side of the face as also the right arm and leg were paralysed. The eyelids were now closed and resisted attempts to open them; the conjunctival reflexes were present; both eyes were turned to the left, and movements did not range beyond the middle line; the pupils were medium and reacted to light. The right angle of the mouth was not employed when the child attempted oral movements. The right arm hung limp and flaccid, the right leg was flexed, abducted, and rotated outwards; the patellar reflexes were with difficulty elicited and differed in no respect. There was hemianaesthesia of the right half of the body, with the exception of the right foot, and the upper part of the right half of the face. Later in the day and during the night there were some twelve fits of varying intensity, lasting on an average from two to three minutes. These fits were Jacksonian in character and began with turning, followed by rapid oscillations of the eyes to the right, next twitching about the right angle of the mouth, and ultimately convulsive movements of the whole body. As each attack passed off there was some coughing with expectoration, then the eyes were turned to the left and maintained there. On April 2nd right lateral hemianopsia was noted. The eyelids were now generally kept open. A number of apparently minor fits were observed, affecting only the eyes, which were turned to the right and oscillated rapidly. There were several major fits during the day, and towards evening they became more frequent. Liquid nourishment was well borne, and there were no attacks of vomiting. Ammonium bromide in 1-gr. doses was directed to be given every two hours or oftener if necessary.

After-history.—The fits recurred, though with gradually lessening frequency, until April 6th. The temperature was very erratic, at times reaching 103° F., but never for long remaining at that height. The lungs were resonant, and the urine was invariably free from albumen. The diphtherial membrane disappeared three days after admission. On April 6th the child seemed very drowsy and much weaker. The breathing was rapid and shallow, and on April 7th was of the Cheyne-Stokes type. The ammonium bromide was discontinued. On April 11th the patient seemed better. The coughing and expectoration were much diminished, but the Cheyne-Stokes breathing persisted. On the following day the paralysis of the right side of the face was no longer evident. The Cheyne-Stokes breathing was present at intervals until April 15th, after which date the child's condition steadily improved. By April 24th the hemianopsia had entirely disappeared; the right arm was at times moved from the elbow-joint, the right leg showed no signs of voluntary movement, and on feeding there was no indication of facial paralysis. Sensation had returned in both the right arm and leg; the right half of the trunk was less sensitive than the left. When the child was raised the helpless condition of the right arm and leg was very apparent. On May 3rd, thirty-three days after the onset of the hemiplegia, the child was, at the mother's request, taken home. The right leg now showed signs of returning power. The right arm was capable of voluntary movement only up to the elbow. Anaesthesia had quite disappeared. The mother informed me that prior to this illness the child could talk "wonderfully well"; on the day of discharge he could only utter an inarticulate cry. On June 7th, sixty-eight days from the date of attack, save for some weakness in the right arm, recovery was complete. The child walked well, and the mother stated the power of speech was better than before the illness.

REMARKS.

That the hemiplegia was the result of intracranial haemorrhage will, I think, be readily admitted. Diphtheria had first been diagnosed six days before the onset of the hemiplegia, so that, even if we make allowance for the diphtheria bacilli having been present for a longer interval, the possibility of toxic neuritis is excluded. Moreover the onset of symptoms of, and recovery from, the paralysis were characteristic of a central and not of a peripheral affection.

Whooping-cough had been present for six weeks; during that time the recurrent paroxysms of cough must have exposed the cerebral vessels to considerable strain, which had at length resulted in a rupture, with extravasation of blood. The right hemiplegia, hemianaesthesia, and hemianopsia, coupled with the Jacksonian character of the subsequent fits, served to show that the lesion was subdural, and that the blood clot extended over a considerable portion of the left cerebral hemisphere.

The fate of this haemorrhagic effusion must remain a matter for theoretical speculation. It may have become absorbed, and the fact that the areas which were presumably pressed on by the periphery of the clot recovered first would seem to support this assumption; it may, however, have become encysted, with adaptation of the brain and skull to the presence of this unwelcome host, and thus have led to the ultimate disappearance of the symptoms of compression and

irritation. I regret that I was unable to follow up this case further. It is well known that such children may in time become the subjects of epilepsy, or that their intelligence may remain impaired. Although complete idiocy has been recorded, more often there is only defective mental power or backwardness.

LESION OF POST-CENTRAL CONVOLUTION WITHOUT PARALYSIS.

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IN C. S. Sherrington and A. F. F. Grünbaum's¹ experiments on the brains of the higher apes the electrode placed on the surface of the post-central gyrus failed to elicit movements. Large lesions also in this area caused no paralysis. Purves Stewart² stimulated electrically the human cortex behind the fissure of Rolando in the ordinarily assumed position of the leg centre without result. The following case proves that a focus of softening in the ascending parietal convolution is not necessarily associated with monoplegia.

A young man was progressing well, late in the course of a severe attack of enteric fever, when he had a transient epileptiform seizure, the probable date of the onset of the thrombosis. He regained consciousness, and was able to move all his limbs freely. He was observed to feed himself with his right hand. Three days later a sudden recurrence of general convulsions took place, which ended in death after three hours. The brain was removed within two hours of his decease. The veins of the pia mater were blocked on both sides near the fissure of Rolando. The cortex was unaffected, beyond congestion, except in one spot in the left post-central gyrus rather more than 1 cm. in diameter, about 7 cm. from the middle line, in what is usually figured as the arm area. Here the brain substance was blood-stained and very soft, contrasting markedly with the rest of the organ, which was unusually firm. Although the veins on either side were symmetrically plugged, only the group over the focus of softening was surrounded by a zone of ecchymosed pia mater, which thus suggested an earlier date for the thrombosis on the left side. The venous sinuses, veins of Galen, arteries of the base, and iliac veins, were all patent. There was no meningitis. The intestinal ulcers were all but completely repaired.

Eberth's bacillus was recovered from the spleen.

T. Fisher³ noted swelling of the convolutions beneath the obstructed veins in three of his cases, but this was not obvious in the present instance. Meningeal thrombosis is seldom met with in necropsies of enteric fever. This is the only occasion on which I have found it in 160 necropsies of those who have succumbed to this disease in South Africa.

Eugène Dabout⁴ does not appear to mention this complication in his essay on the meningeal forms of enteric fever. It seems probable that it may be the cause of hemiplegic attacks which, with great rarity, may sometimes occur. The case reported by Hödlmoser⁵ of recovery after convulsions in this fever might be explained by meningeal thrombosis, since, as Fisher has pointed out, and as the above example would indicate, the veins of the pia mater can be extensively blocked without permanent brain symptoms arising.

REFERENCES.

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- 3 Theodore Fisher, *ibid.*, vol. ii, 1901, p. 9; and ii, 1902, p. 947. 4 E. Dabout, *ibid.*, vol. i, 1902; *EPITOME* (321).
- 5 C. Hödlmoser, *ibid.*, vol. i, 1903; *EPITOME* (2).

ON THE ALLEGED INCREASE OF DISEASES OF THE NERVOUS SYSTEM.

By JOHN MILSON RHODES, M.D.,

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THERE is a popular idea that diseases of the nervous system are increasing, and especially mental diseases; one writer describes the increase of insanity as terrible, and no doubt the rise from 87,000 to 116,000 in the number of certified insane is a very grave question for the ratepayers, and one that requires very serious consideration, both by those responsible for the legislation necessary for the proper treatment of cases of mental disease and also of those responsible for the administration of the law. The general idea is that the increase in the number in the asylums is equivalent to an

equal increase in the ratio of the insane. In the report of the Metropolitan Asylums Board we find the following figures:

Percentage of Cases of Admission to Notification.

Disease.	1890.	1901.
Scarlet fever...	42.82	78.89
Diphtheria ...	17.87	74.85
Enteric ...	22.49	45.34
Typhus ...	42.86	85.00
Small-pox ...	36.67	97.29

These figures prove that the opinion of the public has undergone a great change in regard to the treating of patients in hospitals. Again, in the sanatoria all over Europe and America there must be thousands of cases of phthisis to-day where there were hundreds twenty years ago, but no one suggests that the number of cases of phthisis has increased; the Registrar-General's returns showing that the ratio of mortality is only two-thirds of what it was twenty years ago are taken as proof of the contrary.

If the public have such an increased amount of confidence in our institutions in regard to infectious diseases, is it not probable that a similar change of opinion has taken place in regard to nervous and mental disease? There was, according to the report of the Registrar-General, an increase in the mortality from diseases of the nervous system between 1866 and 1885 as shown by the following figures:

Mortality per Million.

1866-70	1871-75	1876-80	1881-5	1886-90	1891-5	1896-1900
1605.2	1715.8	1803.4	1807.6	1779.6	1596.2	1481.4

But it will be noticed that since 1885 there has been a fall, and a reference to the last report of the Registrar-General, showing the new classification, proves that, whereas the annual mortality between 1882 and 1891 varied between 737 and 940, that between 1892 and 1901 was between 694 and 803. The following are the comparative figures for 1891 and 1901:

Disease.	1891.	1901.
<i>Increase:</i>		
General paralysis ...	96	112
Insanity ...	74	83
Paraplegia ...	127	146
Other diseases of nervous system ...	5	6
Chorea ...		
<i>Decrease:</i>		
Softening of brain... ..	113	66
Meningitis ...	291	217
Epilepsy ...	105	88
Laryngismus stridulus ...	28	14

A glance at the figures at once suggests the question, Has the mortality from softening of the brain fallen by nearly 50 per cent. in ten years, or is there better classification? These figures make it at least questionable if there is any increase in nervous diseases, but many, acknowledging that this may be the case in regard to nervous diseases, insist "on the terrible increase of insanity that is going on."

Before we look at the actual figures it is perhaps as well to point out the change that has taken place in the distribution of the people as regards urban and rural districts; the figures are as follows:

Year.	Rural.	Urban.
1891 ...	7,257,239	21,745,286
1901 ...	7,469,488	25,058,355
Increase ...	212,249	3,313,069

This exodus from the rural to the urban districts has been going on for many years, but not to the same extent as during the last decade, and this congestion of the towns has resulted in the vast blocks of working-class dwellings which are seen in London, Manchester, Liverpool, and elsewhere. A moment's consideration will show that a lunatic who could quite well be provided for, or, at any rate, tolerated, as they are in some of the country districts of Scotland, Belgium, and

the United States, cannot be kept at home in a city on account of the neighbours. Specially is this so in the enormous tenement dwellings of the United States. The Lunacy Commission's return shows that only the councils of Radnor, London, and Wilts have over 4 per 1,000 of pauper lunatics, but amongst the county boroughs Bath had 4.74, Brighton 4.64, Bristol 4.16, Dudley 4.19, Liverpool 4.71, Norwich 4.80, Nottingham 4.50, Southampton 4.04, Stockport 4.49, Hereford 4.49, and Wenlock 4.29. Half these places are towns or cities where a very large number of women are employed in mills. Still the fact faces us that the total number of insane has risen from 53,177 in 1869 to 113,964 in 1903. The rise, as the return shows, does not equally apply to all classes.

	1869.	1903.
In county asylums ...	26,867	82,009
In metropolitan licensed houses ...	2,682	1,982
In registered hospitals and idiot establishments ...	2,352	4,282
In provincial licensed houses ...	2,114	1,614
In naval and military hospitals ...	209	230
In Broadmoor ...	461	738
In workhouses, ordinary ...	11,181	11,264
metropolitan district asylums ...	—	5,840
With relatives or others ...	7,311	6,005
Total ...	53,177	113,964

The ratio of admissions has risen from 4.71 per 10,000 of population in 1869 to 6.93 in 1903. The rise in the ratio of admissions is practically confined to the pauper class, for private cases have only risen 0.06 since 1889, and the criminal only 0.01.

In looking at the total increase a great many people forget the facts that every case admitted will on the average remain twelve years in the asylum. It is this low recovery-rate that throws such a serious burden on the ratepayers. Any one who will calculate what is the result of a recovery-rate on "admissions" of 38.17 per cent. and a mortality of 9.69 per cent. will be surprised at the rapidity with which the number under treatment accumulates.

The number of certified insane has increased enormously, and it is our duty to see what are the causes that throw this heavy burden upon the peoples of all civilized countries.

One of the most potent is the changed and changing conditions under which we live. No cause that I know of has a more powerful effect than that of the crowding of the population into the towns; with that crowding has come an increase of rents that makes housing a serious matter to the working classes. This no doubt is one of the causes, the serious effects of which are even better seen in the United States than here. The State Board of Massachusetts in a recent report gave a prominent position to this cause, and said that

Home cure of the insane is the most difficult of any class of dependents because they are most likely to disturb and interfere with the rights and comforts of neighbours; but the burden of dependence in general tends to become more onerous on account of the natural increase in density of population and the more frequent migration from small to large centres. Such burden is more easily borne in country districts, where living is cheaper, separation of neighbours wider, interference more avoidable, and tolerance of eccentricities of conduct greater than in cities or large towns.

In the enormous blocks of tenement dwellings such as exist in London, Manchester, New York, Chicago, and Berlin, this cause is no doubt acting powerfully.

Another cause is the fact that year by year a larger number of women are found in the working classes, so leaving in many cases no one free to look after the lunatic at home. Still more powerful as a cause is the confidence that the public now have in the humane treatment of the cases in the mental hospitals of England; probably this feeling of confidence in institutions has been greatly increased by the general use made of hospitals for infectious diseases, with the result that the stigma of pauperism that used to be almost invariably associated with the asylum has to a very great extent disappeared, and they are now looked upon as what they really are—State hospitals for mental diseases, in which all suffering from such diseases have a right to treatment. In my opinion the State Board of Insanity of Massachusetts, U.S., very fairly stated the case when they came to the conclusion:

1. That the increase of registered insane does not necessarily imply an increase of incurring insanity out of proportion to the growth of population.
2. That the rate of increase of occurring insanity is certainly much less than the apparent increase of the insane.
3. That there is a marked and growing tendency to commit all classes

of the insane to institutions, especially in the case of old people, of the feeble-minded, and criminals.

In my opinion, it is for the benefit of the State that the mentally unfit should be taken care of, so that the multiplication of the unfit may as far as possible be prevented.

A CASE OF PROPERITONEAL HERNIA.*

By H. BETHAM ROBINSON, M.S.LOND.,

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IN vol. lxxxii of this Society's *Transactions* my colleague, Mr. G. H. Makins, has recorded a case of prevesical hernia, and in the differentiation of that particular form reference is made to a somewhat allied condition, properitoneal hernia.

It is now my privilege to bring before you a typical case of this rather rare variety, which contrasts well with Mr. Makins's. The following are the details of my case:

History.

S. W., aged 54, a waterside labourer, was admitted into St. Thomas's Hospital on January 20th, 1901, under the care of my colleague, Dr. Acland. Of his previous history there is little to say beyond the fact that a left inguinal hernia had been present for many years, for which a truss had been worn; whether it was strictly "congenital" (that is, existed from birth) could not be stated. The hernia apparently had been kept up by the truss, and there had never previously been any trouble.

Until January 17th the bowels had been quite regular, on January 18th there had been no action, and on January 19th a very small motion was passed. From this time there had been no further passage of faeces or of flatus. The same morning he was sick for the first time and continued being so, vomiting eight times during the day, the vomit gradually becoming darker and offensive. On January 20th sickness was almost constant, and was now accompanied by severe abdominal pain. He was brought up to the hospital in the evening and admitted.

Condition on Admission.

Examination showed his abdomen to be greatly distended, but moving with respiration. The abdominal wall was fairly flaccid, and there was no definite tenderness anywhere. The percussion note was tympanitic, the liver dullness being partially encroached on by the distended intestines; there was no dullness in the flanks. Nothing abnormal could be felt per rectum. Both inguinal canals were free of any hernial tumour, and "both testes were normally placed." The tongue was furled and moist. The vomit was dark bile-stained, but not particularly offensive. The pulse was 88 and regular, without much tension, and the temperature was 99.6° F. Two enemata were given with very scanty result. As the patient was evidently suffering from intestinal obstruction, I was asked to see him and decided on immediate operation.

Operation.

After the administration of chloroform further palpation of the belly showed some increased resistance on deep pressure just above the pubes on the left side, but this had no ascertainable connexion with the inguinal canal, which seemed quite empty, although not abnormally so.

A vertical incision, about $\frac{3}{4}$ in. long, was made in the median line below the umbilicus. A loop of small gut and matted omentum were found entering through a small opening into a pouch situated behind the left abdominal wall and to the side of the bladder. As the edge of the opening constricted tightly the contents of the sac, its margin was everted, and the congested matted omentum was able to be withdrawn, but not so the bowel; on introducing the finger into the sac by the side of the gut, the latter seemed firmly adherent in front over the situation of the internal ring. As the state of affairs present seemed related to this hernia, I opened up the inguinal canal in the usual way from the front, and found an empty peritoneal sac. On following this up to the internal ring there was seen presenting in the opening itself, but not projecting through it, bowel, which was firmly adherent, quite black, and lacerated easily on attempted separation. It was evident, then, that the bowel occupied, and was strangulated in, a pouch behind the abdominal wall; also that the loop of bowel occupying the aforesaid pouch had become gangrenous and was adherent to the sac. I then adopted what seemed the only available method. Having packed round the internal opening and further enlarged it, I separated the adherent loop from the sac, withdrew it through the internal opening, and brought it out externally through the abdominal wound. The bowel for $\frac{1}{2}$ in. was gangrenous, due to the severe constriction at the opening into the peritoneal cavity. This portion of the bowel, with its corresponding wedge of mesentery, was excised, and an end-to-end junction was made; a fine silk running stitch through all the coats approximated the ends, and a second securing row of Lembert's sutures was passed through the sero-muscular coats. As the condition of the patient did not allow of any delay, the sac itself was thoroughly washed out, but not excised; a gauze drain was placed down to the internal ring, and both the abdominal and inguinal wounds were sutured up. Infusion of normal saline was done into the median basilic vein with temporary recovery, but he collapsed about one hour after the operation, and died somewhat suddenly in the early morning of January 21st.

* A paper read before the Royal Medical and Chirurgical Society.

Necropsy.

In the afternoon of the same day a necropsy was made, and nothing was found to note beyond the local structural changes connected with the hernia; these, on careful dissection, have proved as follows, and may be seen in the specimen. The inguinal sac extends down the canal to just below the external ring; it is in the substance of the cord, the pampiniform plexus being in front and to the outer or left side of the sac, while the vas deferens, with its closely related vessels, is behind and to the inner side. The testis was normally placed in the scrotum. This inguinal sac has a comparatively small opening at the situation of the internal ring into the sac placed behind the abdominal wall. This inner sac is of an oval form with its long axis parallel with the direction of Poupart's ligament; it is markedly convex posteriorly, and measures in its long axis $\frac{1}{4}$ in., and in its transverse axis $\frac{1}{4}$ in. Its inner end is closely placed to the left side of the bladder, the lower and inner part of the sac being within the pelvis and in relation in front with the horizontal ramus of the pubes. In the inner third of the upper half of the sac posteriorly is a circular opening, of about $\frac{1}{2}$ in. diameter, with a very sharply-defined margin: this opening corresponds in front in front with the outer edge of the lower part of the rectus. On the outer side the sac extends into the iliac fossa, resting on and just passing beyond the external iliac vessels; the deep circumflex iliac vessels are to be seen coursing round the outer pole of the sac as they make their way outwards. The sac has an opening in front through which it is continuous with the sac in the inguinal canal, the two forming a bilocular cavity. This anterior opening is placed at the junction of the outer and middle thirds of the sac and to the outside of the deep epigastric artery. Just to the inner side of the internal opening is a small fold of peritoneum passing over the sac to the side of the bladder; this does not, however, appear to be related with the course of the obliterated hypogastric artery. To the inner side of the upper part of the sac is a very small peritoneal fossa—an observation of importance bearing in mind the views of Bär, to be referred to later. From the lower part of the back of the sac another peritoneal fold is seen passing to the sigmoid loop running just external to the true brim of the pelvis.

The case just described is a well-marked example of properitoneal hernia, to which form our attention was first especially drawn in the able papers of Kronlein¹ and subsequently by Breiter.

Its important anatomical feature is that it consists of a biloculated sac, of which the lower loculus is in the inguinal canal and may or may not extend into the scrotum; this pouch at the level of the internal ring opens into a second sac, which is placed behind the transversalis fascia in the subperitoneal connective tissue. This deep sac communicates with the peritoneal cavity by a round or oval opening placed either behind the normal position of the internal ring or more frequently to the inner side of the latter.

This feature of loculation of the hernial sac is common in many forms, and has led to many terms being employed by writers, some of which denote similar conditions, while others express very slight differences; again, very dissimilar conditions have been confused and grouped together under one heading.

In dealing with cases of biloculated hernia in the inguinal region we may subdivide them into two groups:

A. *Both loculi are in front of the transversalis fascia.*

This group admits of several examples.

(a) The simplest form met with is when in the sac of an ordinary acquired or congenital hernia there is a constriction at the site of the external ring, and the sac assumes an hour-glass form. With a congenital hernia a modification of this may arise where the constriction is in the scrotum itself, due to a narrowing in the peritoneal sac at the junction of its funicular and vaginal portions, the indication of attempted closure between them.

(b) A form of sac, the outcome of imperfect descent of the processus vaginalis into the scrotum, where the peritoneal sac, after emerging from the external ring, spreads upwards and outwards over the anterior surface of the external oblique. If the testis descends it occupies this sac, but it may be retained in the abdomen; whatever the position of the testis may be the hernia will occupy this superficial sac, and it may also extend a short distance down into the scrotum. If the testis is present in the sac it gives the abdominal variety of ectopia testis. Cases of this nature have been recorded by Scarpa, Kuster, and Hulke, and I myself reported two others in the BRITISH MEDICAL JOURNAL of June 10th, 1899.

(c) In this form a diverticulum arises in the inguinal canal and extends upwards between the layers of the muscular wall; it represents Birkett's intraparietal inguinal hernia. Goyrand, under the term "*hernie inguino-interstitielle*," describes an exactly similar development of congenital origin, where the dilatation of the sac in the inguinal canal is associated with inguinal retention of the testis; the sac is placed anteriorly to the conjoined tendon between it and the external oblique.