affected, and, if both sides are attacked, the left is generally the worse), the costal margins, the abdomen, and over the fascia lata. Very occasionally patches may be found in other localities, but, apart from the fascia lata, as a rule they are confined to the trunk. Stockman's description of the microscopical appearance is as follows:

"The fibrous tissue is found to be thicker and denser than normal with numerous fibroblasts; the small nerve twigs running through it are in a condition of interstitial inflammation, and the small blood vessels show periarteritis and endoarteritis."

These observations upon the morbid histology of a patch established panniculitis as a distinct entity and explain the character of the physical signs. There is not much to be felt. The sensitive areas are generally smooth; when they are uneven they give the impression of a conglomeration of small shot-like particles. If pressure is applied perpendicularly to the surface the tenderness is slight, but if applied from the circumference of the patch it is most marked. A patch is evidently an aggregation of smaller ones. When the patch is disappearing under massage it splits up into its component parts. The contour of these can be made out, and before they finally disappear they feel like small pin-heads. On picking up the skin and subcutaneous tissue over a patch between the fingers, it feels firmer and less elastic than normal tissues. If the sensitive area is compared with a healthy portion, the practitioner will soon acquire the tactile discrimination necessary to diagnose this affection.

The implication of the nerves produces the symptoms, which are aching pain in the affected part, tingling, stiffness after exertion, numbness, muscular lassitude, and often a distinct loss of energy. Sometimes in early cases the patient is not conscious of any discomfort until the patch (or patches) is manipulated during an examination. The characteristic sign is the exquisite tenderness on picking up the sensitive part between the fingers.

Errors of diagnosis are not uncommon: for example, a case of left intercostal panniculitis was mistaken for angina; a patch over the right costal margin for cholecystitis, and another over McBurney's point for appendicitis. It is comparatively easy to distinguish between a hyperaesthetic skin area and a patch of panniculitis. In the former a slight stroking of the skin produces tenderness; whereas in the latter lateral pressure causes more or less severe pain.

TREATMENT.

The first essential is to improve the digestion. Over-eating or dietetic errors are usually the cause of alimentary irregularity. Secondly, to impress upon the patient the advisability of guarding against chills. If there is any septic focus it should be immediately dealt with. The fundamental principle of removing the cause, if possible, applies with special force to panniculitis. If the pain is severe, or interferes with sleep, a cachet consisting of magistral, pyramidon, and caffeine citrate may be given occasionally; otherwise drug treatment, apart from a digestive aid, is of doubtful value. The best treatment for this affection is skilled massage, given preferably by one who has obtained the Swedish diploma. I generally begin treatment with mild electric massage (d'Arsonval) and then go on to dry massage. In very sensitive ladies the masseuse uses a cream consisting of menthol, methyl salicyl, and cremor rosae. It takes a few weeks before the patches completely disappear. About once or twice a week it is sometimes advisable to substitute for dry massage a massage douche to improve the general health. Dry massage may become somewhat irksome, and a douche is always pleasurable. The vacuum tube (d'Arsonval) has a soothing effect upon the tender area, but the remedy to promote absorption of the effused inflammatory products is massage skilfully given—at first tentatively, and as the tenderness diminishes more vigorously.

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CONGENITAL MEGACOLON WITH ABSENCE OF VAGINA.

BY

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EXTREME constipation and distension of the abdomen present at birth as in the following case without organic obstruction, but with hypertrophied, dilated, and elongated sigmoid colon, are typical of the condition first adequately described by Hirschsprung.

M., a girl now aged 18, the second of eight children, was the only one born with abnormalities. The mother ascribes the daughter's defects to conception having occurred at a time of great distress caused by her first daughter's death from meningitis.

M. suffered from extreme constipation from birth—the midwife had to use aperients and enemata to get away the first motion, which was scybalous, and a doctor had to be consulted. The abdomen became greatly distended. When 5 years old colostomy—in the mid-line below the umbilicus—was performed by another surgeon, and then, for six years, injections had to be used three or four times a week and the bowels were only opened naturally per anum about once in three months. The mother says she could not afford a colostomy apparatus and by the time her daughter was 11 years old begged for something to be done.

On August 10th, 1917, I excised the faecal fistula with an enormously hypertrophied and dilated sigmoid colon. End-to-end anastomosis was done, and a tube passed through the anastomosis and stitched to the anus (Lane's technique). The large bowel not removed seemed almost normal in size but to have thick walls. Since then the bowels have acted naturally; the abdomen is not distended; there is no incisional hernia. The girl earns her living as a shop assistant.

Since she reached the age of 16 there have been mild attacks of abdominal discomfort, sometimes with vomiting, about every three weeks, but as menstruation did not appear she again came under my charge. No trace of vagina or of uterus could be found, even after deep incision into the perineum. The urethra is normal; the rectum roomy and unobstructed, and the secondary sexual characters, though backward, are definitely feminine. If she insists on getting married at some future date it is proposed to fashion from a segment of the ileum a substitute for the missing vagina (Baldwin's operation).

In the textbooks cases like this are not sufficiently separated from those with organic obstruction—for example, of 100 cases collected by Mummery organic obstruction was found in 23. The same authority says: "Curiously enough associated congenital abnormalities are apparently not common." Of his 100 mixed cases, only 15 presented some other congenital abnormality—in 10 abnormality of the anus; in 2 stricture of the colon; in 2 deaf-mutism; in 1 imbecility. Such abnormalities are nothing like so striking as those here recorded.

In another condition where hypertrophy of muscle is present at birth—congenital hypertrophic pyloric stenosis—there is also but rarely found an association with other congenital abnormalities (for example, club-foot). These two conditions—apparently closely comparable—were both first properly described by Hirschsprung. It seems idle to guess why, how, or when such defects arise. At any rate, we can summarily dismiss many of the hypotheses put forward to explain congenital megacolon, because they fail to take into account such facts as the absence of organic obstruction, the presence sometimes at birth of distension of the abdomen, as well as hypertrophy and dilatation of the colon, and the not rare extension of the dilatation right down to the anal canal, and because they do not throw the origin back far enough.

Probably at the present time the help of the sympathetic nervous system would be invoked: a "sympathetic block" might account for achalasia or for a zone of reversed peristalsis or of want of peristalsis, but it is very doubtful whether any neuro-muscular defect could produce hypertrophy even if it caused spasm. We can produce deformed starfish at will by shaking, needling, or otherwise interfering with the segmenting ovum. So in attempting to explain congenital deformities in the human species we can go right back to the egg stage—some "impression" on the ovum might result in an abnormal trophic control (nervous or chemical), with the result of overformation of muscle. At any rate, in the present case the mother was on safer ground than is usual in placing her "maternal impression" at the time of conception.

Even as regards the treatment of megacolon, there is much difference of opinion. In the case here related treatment was of necessity surgical: colectomy was demanded, and the result surpassed expectation.

Colostomy may be done as a first stage, but should, if possible, be followed by excision of the artificial anus with colectomy and anastomosis. Mummery advises the lumbar route for colostomy, saying that inguinal colostomy is very dangerous, as the heavy bowel tends to tear away, that a spur cannot be formed, and the obstruction is often not relieved, and that he has only found two cases in which any real benefit resulted.

Colectomy, no doubt, is a very formidable undertaking in a toxic, undernourished patient, especially in the presence of a faecal fistula; but most people would prefer to take the risk to passing adolescence and maturity in the alternative condition.

TREATMENT OF GENERAL PARALYSIS BY MALARIA.

BY

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DURING the past two years (from November, 1922, to November, 1924) 608 acute male cases have been admitted to this hospital. Most of the patients giving a history of syphilis, or showing signs and symptoms, definite or suggestive of a late specific infection, have been subjected to the diagnostic biochemical tests. The Wassermann and Sachs-Georgi tests have been applied to the blood and cerebro-spinal fluid, and the colloidal gold test to the latter. Of the two years' admissions, 89 (14.6 per cent.) have been diagnosed as suffering from general paralysis. This percentage may later prove to be greater, as many patients recently admitted have not yet been subjected to the various tests.

The youngest patient (acquired infection) was aged 27, the oldest 61. The duration of the attack before admission, as shown by change of conduct, varied from seven days to five years. As a cause of death general paralysis accounted for 44 out of 95 deaths in the two years—that is, 46.3 per cent., a remarkably high figure.

In November, 1923, the malarial treatment of general paralysis was commenced. Professor W. Yorke of the Liverpool School of Tropical Medicine kindly provided the mosquitos (*Anopheles maculipennis*) infected with an Indian strain of *Plasmodium vivax*. During the year 53 cases were treated. The infection was conveyed by the mosquito in 23 cases; by inoculation in 30 (intravenous 16, intramuscular 13, subcutaneous 1). The incubation period, measured by the appearance of parasites in the peripheral blood and the occurrence of fever, varied according to the mode of infection, thus:

	Average.	Shortest.	Longest.
Mosquito	14 days	7 days	20 days
Intravenous	7 "	4 "	19 "
Intramuscular	16 "	10 "	23 "
Subcutaneous	20 "	—	—

In two cases the incubation period following intravenous inoculation was four days.

(a) April 14th, 1924: Inoculation of 2 c.cm. of blood from donor during apyrexial period after six double tertian rigors. Pyrexia of 102° F. on afternoon of 17th; blood positive on April 18th.

(b) May 28th, 1924: Inoculation of 2 c.cm. of blood from donor after three single tertian rigors. Pyrexia of 101° F. on night of May 31st; blood positive on June 1st.

The infected patients were allowed to have rigors; ten was the number aimed at, but in thirty instances, owing to the poor general state of the patient, the malaria was cut short with quinine sulphate somewhat sooner. Thirty grains daily for three days were always given. Seven rigors was an average number. Spontaneous cure with disappear-

ance of the parasites occurred in 8 of the remaining 23 cases (34.7 per cent.) after three to nine rigors. This percentage would probably have been greater had the malaria been allowed to run a longer course in some of the other cases.

It is generally considered that large doses of the arsenical compounds are contraindicated in cerebro-spinal syphilis. Doses of 0.15 to 0.3 gram novarsenobillon were given at first; this dosage was increased, and finally 0.9 gram was given intravenously at the height of the pyrexia. Seven cases were treated with this maximum dose and no ill effects were observed. The parasites became scanty within two days, but quinine in the usual dosage was finally given to clear the blood.

When remission in the general paralysis occurred it took place at any time; in some during the period of malarial pyrexia and in others as long as six months later.

Results of the 53 Cases Treated.

1. Complete remission	7=13.2%
2. Improving both mentally and physically	9=16.9%
3. Slight mental with improved physical health	17=32.0%
4. No change mentally or physically	5=9.4%
5. Deaths from time of treatment up to one year after, including 6 who collapsed	15=28.3%

In Class 3 seven of the patients were bedridden, dull and confused, and wet and dirty in their habits; following treatment the mental condition improved slightly, but the physical change was marked. The patients put on weight, regained control of the sphincters, and were soon able to be up and about in the ward. Two patients have been in this state of partial remission for twelve months.

Relapses of the malaria have been frequent (14 up to date). Of the original 23 mosquito infections, 13 (56.5 per cent.) have relapsed, whereas of the 30 inoculated cases only one (3.3 per cent.) has relapsed. The relapses in the mosquito-infected cases have occurred at periods varying from twenty-one days to eleven months after. The usual three-day course of quinine was given, but in a number of instances two, and even three and four, further pyrexial attacks were observed.

Wagner-Jauregg,¹ Mühlens,² Kirschbaum,³ and Grant and Silverston⁴ have already pointed out the infrequency of relapse in inoculated cases of malaria. The high percentage of relapses in the mosquito-infected cases is similar to the percentage of relapses in the naturally infected cases of the late war—38 to 100 per cent. of relapses following courses of quinine (Yorke and Macfie⁵). It would appear that passage through the mosquito in some way produces an infection which is more difficult to cure than the inoculated disease, though the two infections would appear to be identical as regards the type and severity of the pyrexia and the blood picture. Following the hypothesis of Yorke and Macfie, the mosquito strain, whilst reacting to quinine, in many instances soon becomes resistant to the immune body; some parasites persist, though not found in the peripheral blood, there being a state of balance. Sooner or later the balance is lost by decrease or weakening of the immune body; the parasites multiply and relapse occurs, with or without a rise of temperature according to the reaction of the host. On the other hand, the inoculation strain responds to quinine, and would appear to be completely destroyed by the immune body formed. The question still remains, however, why patients infected by the mosquito relapse so frequently as compared with those inoculated under the same conditions. In these experimental cases it would appear that the mosquito strain is more resistant, rather than that there is variation in the capacity of the host to produce immune body.

Infection followed feeding by mosquitos, or the injection of malarial blood, in all cases treated, but in two instances there was no pyrexial attack, simply the appearance of parasites in the blood. Blood infection only, without pyrexia, occurred also in a third patient who already had had an attack of inoculated malaria. The circumstances are of interest.

CASE I.

The patient had been treated with malaria in a general hospital four months previous to admission to the Mental Hospital. He had had eight to ten rigors, followed by spontaneous cure, but parasites persisted in the peripheral blood. On January 7th, 1923, when malaria treatment was considered, the blood was found to be positive. Quinine sulphate, 10 grains daily, was given