

they might be said to be simply secondary, the morbid changes induced in certain structures are in some way arrested, this new material, in its turn, acts as a local irritant, and the consequence is that inflammation and its too frequent result suppuration occur. The morbid changes in organs may be so rapid, that the occurrence of suppuration is likely to be referred to the immediate action of the poison, but in no case, when once retrograde changes have been completed in any organ, do we find abscess of that organ resulting; *e. g.*, the amyloid liver or spleen. It is only when the degeneration is in a transition stage, that suppuration occurs. One fact, that this transition material acts as a local irritant, can be adduced from practice, for who has not observed the regular recurrence of paroxysms of ague, when once retrograde changes have been begun in the spleen or liver?—when these changes have been completed, and we have the “ague-cake,” or waxy-liver, pure and simple, the paroxysms cease, and a totally new phase of the disease comes before us, in the shape of malarial cachexia.

(To be continued.)

LIST OF CASES TREATED BY THE SUBCUTANEOUS INJECTION OF QUININE IN THE HOSHUNGABAD POLICE HOSPITAL DURING 1869.

By P. CULLEN, M.D., *Civil Surgeon, Hoshungabad.*

(Continued from page 63.)

I.—Seetul Patuk, a Hindoo, aged 40, admitted 3rd September, 1869. On the morning of the 3rd, half a drachm of the solution was injected, but slight fever came on, and lasted for about two hours; on the 4th strong fever occurred, and in a less degree on the 5th and 6th, after which there was no relapse, and he was discharged on the 10th, cured.

II.—Jusruth, a Hindoo, aged 25, was admitted, 3rd September, 1869, with fever on him. On the morning of the 4th a purge was given, but fever continued all day; on the 5th he was free, when half a drachm of the solution was injected, after which he did not get any return, and was discharged to duty on the 12th.

III.—Seewhy Khan, a Mussulman, aged 24, admitted 6th September, 1869. On admission a purge was given, but fever came on; on the morning of the 7th, during the intermission, half a drachm of solution was injected, which cut the fever short at once, and he was discharged on the 12th.

IV.—Tullanath, a Mussulman, aged 40, admitted 8th September, 1869. On admission a purge was administered, but fever returned on the 9th; on the 10th, during the intermission, half a drachm of the solution was injected, which stopped the fever at once, and he was discharged to duty on the 15th.

V.—Runzoor Sing, a Hindoo, aged 40, admitted, 9th September, 1869. A purgative was given at once, but fever did not remit until the 12th, (during 10th and 11th saline mixture had been administered,) when half a drachm of solution was injected; on the 13th he remained free, but on the 14th fever returned very severely, and then left him until the 18th, when a relapse occurred, and again on the 20th; on the 22nd a second injection of half a drachm was given, after which the fever left him entirely, and he was discharged on the 29th to duty.

VI.—Gunnesh, a Hindoo, aged 35, admitted 11th September, 1869. He had fever on him when admitted. A purge was given, but the fever continued until the evening; on the 12th, half a drachm of the solution was injected, but the fever returned with great severity; on the 13th he remained free, but fever returned on the 14th, and on the 15th; on the 16th half a drachm more was injected, and a very severe paroxysm of fever followed, which then left him entirely, and he was discharged on the 21st September.

VII.—Movie, a Hindoo, aged 30, admitted 12th September,

1869, with fever on him. A purge was administered; on the next morning half a drachm of solution was injected, but fever returned, and in a slighter paroxysm on the 14th; on the 15th it was again very strong on the 16th half a drachm more was injected during the intermission, after which the fever left him, and he was discharged on the 21st.

VIII.—Hemnoman Tewary, a Hindoo, aged 60, admitted 14th September, 1869; had been suffering for some days. A purge was given on admission, but the fever continued with remissions the whole of the 15th, 16th, 17th, and 18th; on the 19th half a drachm was injected during the remission, when the fever left, but returned again on the 26th; on the 27th half a drachm more was injected, after which no relapse occurred, and he was discharged on the 1st October.

IX.—Abdool Hyat Khan, a Mahomedan, aged 50, admitted 14th September, 1869. On admission a purge was given, but fever continued strong the whole of the 15th, 16th, 17th, and 18th; on the 19th there was a remission, when half a drachm of the solution was injected, but fever returned slightly that day; he was free then until the 23rd, when he got a slight relapse; he was again free on the 24th, but the fever returned on the 25th and 26th; on the 27th 5ss more was injected, and he remained free on the 28th, 29th, 30th, and 1st October; on the 2nd a relapse occurred, and continued to recur daily until the 7th, when a 3rd injection was made, and he remained free that day and on the 8th; after this slight relapses occurred on the 9th, 10th, 11th, 12th; and 13th; on the 14th the fever left him without any further injection, and he continued free until the 27th, when he was discharged.

X.—Beharee Lall, a Hindoo, aged 21, admitted 17th September, 1869. He had fever on him when admitted. A purge was given, but the fever continued the whole of the 18th; on the 19th half a drachm of the solution was injected, and he remained free that day and the 20th; on the 21st a relapse occurred; on the 22nd half a drachm more was injected, after which the fever did not return, and he was discharged on the 30th.

XI.—Davy, a Hindoo, aged 25, admitted, 18th September, 1869, with fever. A purge was at once given, but the fever continued until the 22nd, when a remission occurred, and half a drachm of the solution was injected, but the disease recurred on the 23rd, 24th, and 25th, and remitted on the 26th; on the 27th, there being constipation, another purgative was administered, and on the 28th half a drachm more solution injected during the remission, but the fever recurred daily until the 4th October, when it left him, and he was discharged on the 10th October.

XII.—Mohomed Walleedad Khan, a Mahomedan, aged 26, was admitted 19th September, 1869, with fever, which continued until the 2nd, when it remitted, and half a drachm of the solution was injected; but the fever recurred very strongly on the 23rd, 24th and 25th; it remitted on the 26th, and he was free on the 27th; on the 28th half a drachm more of the solution was used, after which he remained free until the 3rd October, when relapses occurred daily until the 6th, and then the fever left him, and he was discharged on the 9th to duty.

XIII.—Jair, a Hindoo, aged 30, admitted 28th September, 1869; had fever for some days, and it continued on him until the 22nd, when a remission occurred, and half a drachm of the solution was injected, and he became free and remained so the whole of the 23rd, but on the 24th a relapse occurred, and then the fever left him, and he was discharged on the 28th.

XIV.—Kunnier, a Hindoo, aged 30, admitted 20th September, 1869, with fever on him. A purge was given but did not operate, and was repeated on the 21st; on the 22nd half a drachm of the solution was injected; he remained free from fever on the 3rd, but on the 24th a relapse occurred, and continued daily until 29th, when another purgative was given, and half a drachm more solution used; after this there was no return of the disease, and he was discharged on the 4th October.

XV.—Jewdeen, a Hindoo, aged 35, admitted 20th September, 1869, with fever on him. A purge was given, but the fever continued the whole of the 21st; on the 22nd half a drachm of the solution was injected, after which the fever left him, and he was sent to duty on the 1st October.

(To be continued.)

HOW DOES IPECACUANHA CURE DYSENTERY?

By A. B. HALL, *Assistant Surgeon, Royal Artillery.*

THIS is a question which has been often asked, but which does not appear to have been answered satisfactorily. Waring, in his "Manual of Practical Therapeutics," page 296, tells us that "ipecaquanha possesses considerable sedative powers, as is shown by its influence in hæmorrhagic diseases;" and at page 298—"Its beneficial operation is probably due to its power of diminishing morbid arterial action, and determining to the skin;" but he does not enter into details as to the manner in which he supposes it does so. Garrod tells us that it is given in hæmorrhages "on account of the *sedative* effect on the vascular system which follows the nausea." In Pareira's *Materia Medica*, vol. 11, part 2, page 1597, we find,—"the most remarkable of the effects of ipecaquanha seem to be produced by the agency of the 8th pair of nerves." At page 1599, Pareira ascribes its efficacy in dysentery, partly to its diaphoretic powers, and also to its "tendency to produce an antiperistaltic movement of the intestines," though on the preceding page he writes,—"in severe forms of the disease, no one, I suspect, now would think of relying on it as his principal remedy." This was written several years ago. The experience of most Indian practitioners enables them *now* to arrive at a different conclusion. Still, although several explanations have been advanced, the question does not seem to have been answered definitely; and in hopes of being able to further the elucidation of it, I again bring the subject forward.

Now, let us examine what are the effects produced by ipecaquanha on the body. When taken internally, it causes nausea; and, if swallowed in sufficient quantities, vomiting,—accompanied by considerable diaphoresis. When applied to the skin, in the form of an ointment, in time it will produce a crop of pustules.

Now, why does it cause vomiting? Headland, in his "Essay on the action of medicines in the system," page 228, calls this remedy a "special sedative," and states that it exerts an influence over the three functions of respiration, circulation, and digestion." It, with others, "affects the heart, lungs and stomach, parts which are supplied by branches of the vagus nerve, as well as by the sympathetic." It therefore appears to cause vomiting by exercising a special sedative effect on the pneumogastric nerves, and the medulla oblongata, from which they arise. But, when the medulla is *irritated*, as, for example, by tuberculous deposit at the base of the brain in scrofulous subjects, vomiting is also observed. So that whatever materially disturbs the normal equilibrium of nervous force in the medulla oblongata, one way or the other, either to increase or decrease it, is followed by the *same apparent effect*. If it is irritated, and its nervous force increased, vomiting results; if a special sedative acts on it, and its nervous force is decreased, vomiting also follows. And this, I fancy, is the way that the controlling action of ipecaquanha over the vomiting of pregnancy can be accounted for. The pneumogastric nerves, and medulla, irritated through the sympathetic nerves by the state of the uterus, cause vomiting; small doses of ipecaquanha, by soothing those nerves, stop it. But although ipeca-

anha probably acts with great benefit by its diaphoretic action on the skin, and its general sedative effects on the nervous system, I do not think that the entire curative power of this drug in dysentery can be explained in that way.

The direct effect of ipecaquanha applied to the skin is to irritate it, and produce a crop of pustules. If it has such a stimulating effect on that thick mucous membrane—the skin—may we not presume that it has a more powerful one on the delicate mucous membrane of the intestines? I believe that it is this local stimulating action of the drug on the mucous membrane of the intestines, combined with its general sedative effects on the nervous system, and its diaphoretic action on the skin, which makes it of such value in dysentery. The asthenic inflammation of the bowels (I use the term *asthenic*, because I think, from its proneness to run into ulceration, that the inflammation of dysentery is essentially of a *low type*;) is arrested; the gelatinoid mucus which has been exuded is washed away by a flow of ordinary mucus from the intestines; a healthy action begins to be re-established, at the same time that the nervous and vascular systems are soothed and quieted; and the skin is kept in good working order; and after three or four large doses of the medicine, a cure is generally effected. I say *large* doses, because I have seen patients cured by drachm doses in a few days whom small doses only nauseated. The following is the plan that I generally carry out when a man is admitted into hospital with acute dysentery. The first day, he gets a dose of castor oil, and is put upon milk diet. Next morning at 10 o'clock, having had breakfast at 8, a mustard plaster is put over the pit of his stomach, and after it has been on about 10 minutes, he gets ʒi of ipecaquanha, either in pills, or mixed with one tablespoonful of water, to make it of a semi-fluid consistence. He is then ordered to lie on his back for *two* hours, and not to drink anything at all. The mustard plaster is kept on about 30 minutes. This generally checks vomiting. If he can prevent himself from being sick for an hour or so, most of the medicine will have been retained. Usually, after the first dose, a very favorable change is noticed in the stools, and sometimes after the second dose no more blood is passed. I mention these details simply to bear my share of testimony to the great value of *large* doses of ipecaquanha in dysentery. It is sincerely to be hoped that the efforts now being made to grow ipecaquanha in India may be completely successful; and that we shall never run short of a plentiful supply of what, I think, we may really call *the* specific for dysentery.

A FEW REMARKS ON SUN-STROKE.

By W. K. WALLER, M.R.C.S., ENG., and L.S.A., LOND.

I FEAR that when a case of sun-stroke has to be treated, it is more often under circumstances in which the use of the thermometer is inconvenient, as in the field or on the march, and that, if in hospital or private practice, the urgency of the case appears to demand the application of remedies without delay. But it is desirable that the temperature of the body of a patient, suffering from this disease, should be noted, if only in satisfaction of a praiseworthy curiosity, and spirit of enquiry, because it will be found that the disease is so far unlike other diseases marked by high temperature, as to be singularly amenable to the effects of cold water;—I mean that the temperature once lowered by this means remains permanently at, or a very little above, the natural standard until full convalescence has taken place.

How different this to the effect produced in fevers in which the temperature rises after the cold bath or sponging, which moderates, but does not remove, the inward heat.

In a case of rheumatism with high temperature recently treated at University College by repeated cold baths, the tem-