characters of the two attacks suddenly occurred to me. Malaria suggested itself, and I found, on questioning, that the patient had not only resided abroad, but that four years previously she had suffered from a severe attack of malarial fever.

Acting on this discovery, a dose of quinine (10 gr.) was given, followed by 4 gr. every three hours; she had no more rigors; the temperature was normal in twenty-four hours. Here, then, probably was the explanation which in the first attack was unsuspected. Malarial puerperal fever presents, I believe, some difficulty in diagnosis from puerperal septicaemia: but the main points of distinction were well brought out in this case. First, in both attacks, the onset of fever not occurring until after the fifth day, probably always before this in septicaemia. Secondly, the particularly well-marked rigors and intermission of temperature, much more pronounced than in septicaemia. Thirdly, the short duration of the symptoms. The loaded state of the bowel possibly was a factor which contributed to the intensity of the first attack.

The severity of the first attack—the rarity, at all events, in this country of this condition—and the possibility that others like myself may overlook malaria as a cause of fever in the puerperium, are my reasons for wishing to record this case.

RESEARCHES ON HIBBERTIA VOLUBILIS.

By JOHN REID, M.A., M.D., C.M.,
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THE above plant was identified by my old and esteemed friend the late Baron Sir F. von Müller, who kindly assisted me in the bibliography, and told me that, as the order had been little investigated, my work would serve to indicate the general properties of its members. Tannin and silica are the products found.

The specimens used were obtained at Coraki, on the Richmond River and Manly Beach in N.S.W., in the months of January and February; the pistil and fruit with envelope removed were extracted after being dried.

The alkaloid dillennine may be extracted by acetic acid or spirit by the usual methods. The plant residue is then boiled in methylated spirit to yield the oil, and the residue with alkali to yield dillenic acid, from whose solution a colouring matter—stephenine, named after the late Rev. Geo. Stephen, Fordyce, Banffshire—may be skimmed off, an acid from an alkaline fluid. There is also a brown-coloured neutral resinoid obtained along with the alkaloid, when the latter is precipitated by ammonia from solution.

Dillennine is a white powder depositing acicular crystals from solution in chloroform. Its acetate forms acicular crystals, the dillennate broken plates. Solution in spirit diminishes the colouring power of tincture of guaiacum on potato surface. It is slightly volatile, decomposing partly with the odour of urea or burning feathers—charring. The usual alkaloid reactions are given, with phosphomolybdic acid, $KIHgI_2$, and iodurated potassium iodide. Given internally, the tongue becomes dry and then moist; the circulation is enfeebled; no head symptoms appear. The pupils are dilated, remaining so for a few hours. There seems to be no stimulation of the liver.

Dillenic acid precipitates with lead and lime water, from which precipitates it may be obtained. It is very insoluble in water; its solution does not precipitate iron perchloride, gum, or gelatine. It decomposes sodium bicarbonate, intensifying the sherry-red colour of its solution. Ammonia makes the colour still deeper. Alkaline solutions are very soluble. An alkaline solution gives a dark ink-like solution with iron salts to transmitted light, with a lighter colour to reflected light. Silver nitrate causes a dark grey precipitate, insoluble in dilute nitric acid but readily soluble in ammonia.

Stains of silver on the fingers are readily removed by dillenic acid and ammonia. Lead in a neutral or vegetable acid solution partially precipitates, in alkaline solution entirely. Alum partially precipitates, lime water entirely or lime salts partially, the lime precipitate being redissolved by acetic acid, etc. Potash solution is partly precipitated by acetic acid; the residue gives a precipitate with HNO_3 ; its residue a precipitate with alum. The acid burns without odour, and seems to smoulder away when heated in a glass tube.

Solution of the acid very speedily caused tetanic spasms in

a common earthworm and death, the worm *post mortem* presenting a flattened appearance. In man internally it seems to act violently on the liver, causing black motions of a watery character, with some griping and nausea. There is no irritant or astringent effect on the mouth, etc. The solution of alkaline salt or acid keeps readily, hence it has antiseptic properties worthy of investigation.

Stephenine, like carmine, dissolves readily in ammonia, and is a nuclear stain; it is soluble in glycerine, insoluble in spirit. It can be readily mounted in dammar, and will stain silk and paper of a rose colour. The oil, soluble in boiling, insoluble in cold methylated spirit, gives the sickly odour of the plant. It is solid and, like essential oils, is non-saponifiable.

BIBLIOGRAPHY.

Phyto. Aust., xl, 94: Müller also, viii, 125; xl, 94. Ersch and Gruber. *Encyc. Bentham, Aust. Flor.*, i, 19. Rosenthal's *Synopsis Plantarum Diaphoricarum*.

HUMAN AND BOVINE TUBERCULOSIS.

A PRELIMINARY NOTE.

By NATHAN RAW, M.D., M.R.C.P. LOND.,

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THE controversy amongst scientific workers as to the exact relationship between human and bovine tuberculosis is still active, and the startling statement of Koch at the International Congress in London in 1901 has, if it has as yet led to no other result, at least stimulated men to active research throughout the world. Professor Koch only this year in Berlin has reiterated his theory, and is as firmly convinced as ever he was that the two diseases—namely, human tuberculosis and bovine tuberculosis or *Perlsucht*, are quite distinct and different, and that bovine tuberculosis cannot be conveyed to the human.

The question is too large to be discussed here, and it is, of course, quite beyond my powers, in the absence of careful and prolonged experimentation, to offer a solution, but although I was taught to believe that the two diseases were really identical, previous to the paper by Koch in 1901, I have after careful observation entirely changed my view, an opinion which is based chiefly on clinical observation.

During the last five years, namely, from 1898 to 1902, I have had under my care in Mill Road Infirmary 1,750 patients suffering from various forms of phthisis pulmonalis, and 273 children suffering from *tabes mesenterica*. In addition to these cases, there have been a great number of patients affected with varying forms of tuberculosis of joints, bones, glands, and skin, as would be expected in a large Poor-law infirmary containing 800 beds.

Careful *post-mortem* examination with bacteriological and microscopical observations have been carried out in the laboratory, together with inoculation experiments conducted at the Thompson-Yates Laboratories, University College.

Up to the present time it has been customary to classify all the lesions called tuberculous in one general category of disease, and to say they were all produced by one bacillus, namely, the tubercle bacillus of Koch. The chief of these lesions are:

Phthisis pulmonalis.
Tuberculosis of pleura.
" " peritoneum.
" " lymph glands.
" " joints.
" " bone.
" " skin.
" " other organs.

If we consider for a moment the disease called *tabes mesenterica*, which is classified as tuberculosis, we must ask ourselves the questions, "How does the bacillus gain entrance to the mesenteric glands?" and "Why is the disease not decreasing with other forms of tuberculosis?"

The late Sir Richard Thorne-Thorne in his Harben lecture of 1893, says:

The matter, too, assumes a still more serious aspect if we limit ourselves to the first year of life, when raw milk is most largely used as food, for then we find that the reduction in the rate of death from the various forms of tuberculosis, which reduction has been going on at all ages for about half a century, not only disappears, but is actually transformed into a large increase, reaching no less than 27.7 per cent.

This in itself is grave enough, but its significance is still further emphasized when we remember what are the circumstances under which this increase in the rate of death from *tabes mesenterica* has gone on synchronously with a decrease in that from other forms of tuberculosis.