for two months previous to the epidemic of jaundice.

There was one fatal case, *viz.*, No. 8222A, Bhabotosh Pramanik, who was admitted to hospital on the 23rd May with the usual symptoms; he became unconscious at 2 P.M. and died the same evening. The *post-mortem* was performed by me the following morning and revealed on section of the duodenum two irregular inflammatory patches measuring 3 inches by 2 inches, situated in the long axis of the bowel above and below the entrance to the bile duct. The liver and all the other organs beyond being bile-stained appeared normal, but the markedly congested state of the brain and its membranes indicated that meningitis had supervened and caused a fatal termination.

On admission all were placed on a strict milk diet and were given small doses of calomel at regular intervals with an occasional saline; under such treatment the jaundice quickly cleared up.

JAUNDICE AT PORT BLAIR, ANDAMAN ISLANDS.

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In Port Blair, jaundice is commonly met with in complication with malarial fevers, and its peculiarity consists in this, that some of the cases suddenly take a bad turn and terminate fatally, so quickly, that in many cases no help can be rendered.

Prodromata.—It is generally preceded by malarial fever, either of intermittent or remittent type, with constipation. Cases which develop jaundice invariably begin to complain of intense pain in the loins, thighs, and upper arms, of a dull and aching character, and this pain continues throughout the course of the attack in more or less severity. The eyes also show congestive redness.

Symptoms.—Generally the fever subsides, or at least comes down before the signs of jaundice are noticed. The aching pain continues in some cases, and tends to increase. The eyes, which were congested in the prodromal stage, become reddish yellow, conjunctivæ bile-stained. The patient becomes apathetic, his features pinched, and his countenance anxious, in fact, his nervous system shows signs of great depression. He answers to questions reluctantly with a low and indistinct voice, and generally in monosyllables. These signs are so invariable that whenever they are noticed in the course of a case of malarial fever, specially when the temperature has come down, suspicion is aroused.

The tongue is generally coated with whitish-brown and thick fur, in some cases it becomes dry. Appetite dull, but thirst urgent. In some there are nausea and vomiting. The vomited matters chiefly consisting of a good quantity of bile. They are of brownish or greenish yellow colour and sickening in smell. The bowels continue to be constipated, as a rule, but the motions, whether natural or induced by purgatives, are in most cases distinctly bile-stained, and are not so offensive in smell, as is characteristic of the white jaundice stools of India. In most cases there is no tenderness or pain in the hepatic region. Spleen is found enlarged in some cases only, especially where there is history of chronic malaria.

When jaundice becomes well developed, respiration becomes slow and of a sighing character. In severe cases, where the temperature continues high, pneumonia is a common and dangerous complication.

With the development of jaundice, the heart's action becomes slow as a rule, when there is no fever; but of course the pulse rises with the rise of temperature. In some the pulse has been found dicrotic. In cases which ended fatally from internal hæmorrhage, the pulse was found hard, full and bounding. In some cases epistaxis takes place and reduces the cerebral congestion, as is evidenced by the subsidence of headache and other troublesome head symptoms.

The urine from the beginning is of dark and high colour, and when jaundice develops, it shows the characteristic play of colours of "Gmelin's" test. It then stains the linen with a fast yellow colour, which cannot be removed by washing with soap and water. The specific gravity generally ranges from 1010 to 1015, and the reaction is acid. Albumen is invariably found to be present. Under the microscope some tube and epithelial casts are seen in the sediment. Some complain of smarting pain at the tip of the urethra, as is common with high coloured urine. Pruritus or itchiness of the skin, which is a characteristic distressing symptom of jaundice, as is commonly seen in India, is rare in this settlement. The skin becomes dry, and sweating almost ceases. Before death patients complain of a burning sensation all over the body, become restless, and wish to be fanned constantly.

Progress.—In favourable cases the bowel acts freely, the flow of urine becomes abundant, the pains abate, the tongue clears up, the appetite improves, and the skin resumes its functions again, and begins to sweat.

But in unfavourable cases, all the symptoms mentioned above are aggravated. The patient becomes more and more apathetic and dull, running on to a state, which can be said to be only short of coma. As regards appetite, the very sight of food is disgusting to the patient. To him almost everything tastes bitter. If fed forcibly with nitrogenous food, such as meat-juice, soup,

and broth, his stomach becomes distended, he eructates constantly, and in many hiccup becomes a distressing and very unfavourable symptom. If a portion of the lung has been hepatized, there is of course a rise of temperature. Otherwise, the temperature is normal at this stage or subnormal. The patient gradually sinks.

In other cases hæmorrhage takes place. Epistaxis, as has already been said, is generally a favourable symptom, and reduces the patient's suffering by relieving him of headache and heaviness in the head, but internal hæmorrhages are always grave symptoms, and in Port Blair the danger of jaundice lies in these internal hæmorrhages. A patient, apparently doing well, his temperature either normal or slightly above it, his appetite fair, probably he has been sitting up in his bed and talking to his neighbouring patients, but all of a sudden he is reported to have fainted, and before any help can be rendered he is found to be dead. This is the peculiar element of danger in jaundice cases here, *viz.*, its sudden fatal termination.

Post-mortem appearances.—After death the temperature of the body rises in many cases. This is generally the case where the fever was of a remittent type and the patient died after coma or convulsive fits. The rigor mortis appears early and lasts longer. The conjunctivæ, the palms of the hands, the soles of the feet, and the skin (incases of fair-coloured people) are bile-stained; as also the tissues and fluids internally, so much so, that the cut ends of the costal cartilages look distinctly yellow or reddish-yellow in colour. All the organs show signs of acute congestion. In many cases hæmorrhagic infarcts are found on the surface of the lungs, liver and kidneys. *Ante-* and *post-mortem* clots are found in the right chambers of the heart, which can be traced to the big veins and pulmonary artery. The *ante-mortem* clots are generally of yellowish hue, thick in consistency, stratified, and adherent firmly to the cordæ tendineæ and musculi papillares. Usually a little yellowish fluid is found in the pericardial sac. The liver is found congested, and in some cases it is enlarged. The gall-bladder, in most cases, is found distended with thick and gritty bile. Its mucous membrane discoloured and the bile-ducts in many cases blocked up with thick, tenacious, inspissated mucus. In a few cases coagulated and fluid tarry blood has been found in the gall-bladder. In some cases the mucous membrane of the duodenum is thickened, specially where the common bile-duct opens into it. The contents of the intestines are sometimes muddy, but in most cases bilious, not like the abilious white fæces of jaundice, as is commonly seen in India. The pyloric end of the stomach, and the hepatic flexure of the colon, are found in some cases to be of brownish-yellow colour, probably due to the dialysis of bile-acids and pigments, from the gall-bladder. Spleen, if not malarial, does not show any particular change. Kidneys are found congested; the expanded portions of the calyces containing some reddish yellow fluid. In some cases the capsules are adherent. The scalp is generally congested. The skull and the dura mater are coloured yellow, and the vessels of the meninges and the brain are engorged. The subarachnoid spaces contain yellowish serum. In some cases lymph, coloured yellow, is found at the posterior and lower parts of the brain. The substance of the brain itself is coloured yellow, as also the fluid in the ventricles. Sometimes large hæmorrhages, especially meningeal, are found in cases which have terminated in sudden coma. In cases of sudden death, either this or other kinds of hæmorrhage are commonly seen; such as melæna, or pulmonary apoplexy. In the former, the whole of the intestines, especially the small, contain black tarry blood, mixed with fæcal matter. In the latter cases both the lungs are found to be full and yellowish black; blood extravasated in the substance, and on section dark clots of blood are found in the cut-ends of the bronchial tubes. In some cases coagulated and fluid tarry blood is found in the stomach. The peculiarity is, as has been said, in the duodenum, the gall-bladder, and in the bile-ducts. In some cases the duodenum is found œdematous and swollen. The lumens of the common bile and cystic ducts are found filled with thick, tenacious, inspissated mucus. The gall-bladder contains thick and gritty bile, sometimes coagulated and fluid blood.

Cause.—In Port Blair jaundice cases are invariably associated with malaria, which may be said to be an essential cause of it, inasmuch as the malarial parasites are the great destroyers of the coloured corpuscles of the blood. In this sense, the jaundice of Port Blair is of a hæmatogenous variety, but why out of so many thousands of cases of malarial fevers only a few develop jaundice, is not easily understood. But whatever may be the real cause of the complaint in the majority of cases, it has been noticed that they come from such occupations as necessitate sudden or constant and prolonged exposure to rain, *viz.*, firewood cutting in the jungle, repairing embankments, working in the brick-fields, cultivating and watching the paddy-fields, &c.

It differs from Weil's disease in the following points:—

1. It never occurs in epidemic form.
2. There is no definite course of the disease, or of the fever accompanied with it. The accompanying fever is malarial.
3. It does not set in abruptly.
4. No pain in the cheeks has ever been complained of by patients with jaundice.
5. The blood of typical cases of jaundice with fever has shown malarial parasites under the microscope.

Statistics.—During the ten years from 1892, 588 cases of jaundice were treated in the Viper Hospital. These of course include the most mild cases also. Of these, 351 were Hindus, 123 Mahomedans, 107 Burmans, and 7 Native Christians. According to class, 506 were labouring convicts, 13 invalids, and 69 self-supporters. Of these 588 cases, 78 or 13·26 per cent. died.

Treatment.—As soon as jaundice is suspected a dose of calomel and soda forms the best initial treatment. After the bowels have acted well, regular administration of diaphoretics and diuretics, with which sulphate of magnesia or soda is combined, may be said to be a routine treatment of such cases here. Cases in which the hepatic function has been deranged, or in which the tumefaction of the duodenum or inflammation of the ducts and gall-bladder is present, improve considerably under the above treatment. In such cases, counter-irritation by mustard plasters, or by iodide of mercury, does good. Local application of diluted nitro-muriatic acid has also been used in many cases with benefit. In all the cases quinine is given to counteract malaria. Pain in the muscles is best relieved by shampooing and rubbing the parts with some liniments, such as liniment of camphor or camphor-oil. Other symptoms are treated as they arise: such as hiccup by morphia, creasote mixture; the melæna by ergot, gallic and sulphuric acids, &c.

As regards diet milk, sago, arrowroot, or rice conjee are given at regular intervals, and in majority of cases against patient's will, as they have no appetite at all at the commencement, and everything tastes bitter to them, so long as the disease is at its height. As appetite improves soft rice, dal-soup, bread, meat soup, &c, are given.

As the disease is slow in its course, so is the convalescence, in which stage small doses of quinine, combined with strychnia, and non-astringent preparations of iron, with bitter infusions, act as a very good blood-restorative.

Few cases of relapse have been noticed.

LIVER CHILL AS A FACTOR OF DISEASE IN THE TROPICS.

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The main object of the present paper is to impress upon readers of this journal more especially those of them who have but recently arrived in the tropics, the extreme importance of possessing as clear an understanding as our present knowledge will permit of in regard to the mode of production, and far-reaching effects, of so-called *chill.* The old term 'liver-chill,' which is still largely used, is in many ways objectionable: 'abdominal chill' or simply 'chill' are both preferable as being more general and non-committal. Saving the matter of avoiding the use of unboiled 'drinking water' derived from any but known and approved sources, we know of nothing than which it more urgently concerns a new arrival in the tropics to possess a thorough knowledge, yet we have found that the average layman, even after long residence in the tropics, is almost, if not entirely, ignorant of the subject, whilst not a few medical officers have appeared to us to possess decidedly vague, and quite inadequate, ideas as to its intrinsic importance.

The first fact to be grasped in this, *viz.*, that after leaving Port Said, on the outward voyage, one passes from a 'thoracic' to an 'abdominal' climate; not absolutely, of course, but relatively so. That is to say, in Britain and other countries within the temperate or cold regions the ever-present danger is 'taking cold,' commonly in some portion of the respiratory system, whilst in the tropics the danger consists mainly in the risk of a sudden 'chill' which, though it does not necessarily affect the abdominal system alone, or even in part, yet, in the vast majority of instances, does produce its injurious effects, directly or indirectly, through that system, the respiratory organs usually escaping entirely.

The next point is this, *viz.*, that whilst, in one sense, there is a close similarity, or even identity, in the two conditions, or, rather, in the mode of their production, in another sense, and especially from a practical point of view, there exists a wide and well-marked distinction. Admitting that in a large number of diseases attributed to cold or chill the presence of a *specific* factor, in the shape of a particular micro-organism, is essential, it is, nevertheless, unnecessary to dwell upon this point for our present purpose, inasmuch as medical men—in the reaction against a too narrow etiology—have been forced to realise that the specific factor of an ailment, even though it may be present for long periods in the human organism, is not seldom powerless for evil unless and until the *general* or *non-specific* or *accessory* factor or factors, which enable the special organism concerned to overcome the natural resistance of the tissues, are called into play. Of such general factors of disease there is probably none, possessed of a greater potentiality for evil than 'cold,' meaning by this term any act or agency by which the temperature of the body, as a whole, or of certain organs or tissues thereof, is unduly lowered. That this is so has been proved to some extent by direct experiment on animals, whilst the clinical evidence available in support of the assertion is overwhelming.

Wherein, then, lies the difference between 'taking cold' and 'getting a chill'? Again, why is it that under one set of climatic conditions the former is so common and almost invariably makes for laryngitis, bronchitis, pneumonia,