

scarcely, if it is at all, greater than the ductus cysticus,) or rather just at the inner orifice of it, or, at least, immediately after having entered it. Of course, the passage of bile is prevented, and the secretion accumulates in all the subordinate or branch ducts, as well as in the cystic duct and the gall-cyst itself. All these gradually become distended to a greater or less degree, corresponding to the activity of hepatic secretion and the duration of the obstruction. Then, a process somewhat akin to, but not identical with, exosmosis takes place, by which the bile in the distended hepatic receptacles is either mechanically extruded or functionally absorbed into the numerous adjoining bloodvessels, which, with themselves and areolar tissue, form the mass of the liver; these bloodvessels being (we need scarcely say) the ramifications of the hepatic artery, of the vena portæ, and of the venæ cavæ hepaticæ. The bile tinges the blood, and is deposited in the rete mucosum. Such is a concise history of jaundice of one origin, and by this all the other forms may be easily understood.

Thus, the *icterus gravidarum*, or that caused by the pressure of the pregnant womb on the ductus communis, requires no explanation. The peculiar cause of the jaundice of infants, or yellow-green, as it is called, which occurs immediately after birth, and lasts a day or two, is somewhat more obscure. I do not consider it to be owing, as is usually thought, to the collection of the meconium in the intestines opposing the exit of the bile, and thus causing jaundice, but rather to the new influences of light and atmospheric air on the infant's skin causing a revulsive action hither. There is also a spasmodic jaundice, for the ductus communis choledochus, like any other duct, is liable to spasm. Jaundice of this origin, however, is to be distinguished from that which we have named functional or idiopathic, inasmuch as while bile passes by the intestines in the last case, it does not so in the former. Lastly, there is jaundice depending on scirrhus or cancerous affections of the substance of the liver or of its ducts, on tumours of all kinds in the liver itself, or in its vicinity,—as, for example, in the pancreas or the intestines, and on other causes too numerous to mention.

Treatment.—While it requires only the exercise of vision to diagnose the presence of jaundice, the distinguishing of the one form from the other is a very different matter, and is often altogether impossible. When, indeed, there are sensible tumours in the liver or in the abdomen, perceptible by percussion and manual tact, or when there is pregnancy, &c., in such cases as these the diagnosis is of course easy. But to distinguish between functional and spasmodic jaundice and cases in which there is a deeply-seated tumour in the organ, is almost or wholly impossible. Icterus calculosus, or that depending on the passage of a biliary concretion along the common duct, is more easily diagnosed, by the paroxysms of agonizing pain with which it is accompanied, and by the fixed seat of these paroxysms.

In functional jaundice, or that which comes on unaccompanied by any acute pain, and in which we can detect no hepatic or abdominal tumour to account for the affection, our course is, to send the patient to the sofa, and enjoin, in the first instance at least, entire corporeal and mental repose. As jaundice, thus devoid of local symptoms and sufferings, may be fairly presumed to depend on spasm or organic torpor, I usually direct an emetic of the potassio-tartrate of antimony; and I consider that, in cases of this kind, the means now mentioned are the most clearly indicated, and the most efficient far of any. It seems to bring to a sudden close the state of spasm of the duct, and to suspend the morbid process of resorption. Moderate diluents may follow, and then, soon after, a small powder of calomel and jalap, to keep up the emulgent action of the liver. The diet meantime must be light, consisting of beef or mutton broth, and stewed prunes. A potion, *horâ somni sumenda*, consisting of the liquor ammon. acetatis, in warm barley-gruel, will equalize the circulation, by gently promoting the transpiratory action of the skin. Many cases of jaundice will be found to require no other treatment than this.

In cases accompanied with acute pain just about the edge of the right hypochondrium, and in which there is no room to doubt that the passage of a biliary concretion along the common duct is the cause of the disease, a hot-bath should be instantly ordered. At the same time, or even before, a dose of castor-oil (we prefer this laxative to any other, in icterus of this nature) should be given, so guarded by aromatic water or oil, as to ensure, if possible, its remaining on the stomach, which is apt to be squeamish. Our object in thus early ordering castor-oil is once for all to have the bowels free, as no doubt opium will be required. The hot-bath (if it cannot be

procured, hot blankets and local fomentations) may temporarily relieve the pain, and during this intermission the patient should drink moderately of warm diluents, containing from two drachms to an ounce and a half of liquor ammon. acetat. Opium should be deferred as long as possible, but if pain becomes agonizing, it should at once be given, with or without a grain or two of calomel, according as the castor-oil has or has not remained on the stomach. The opiate, whether in the solid form or in the tincture, or as a preparation of morphia, should be decided. The liquid preparations have the great advantage of acting more speedily. The opiate being administered, nothing more remains to be done, except warm frictions with camphorated oil, from the right hypochondrium towards the umbilicus, and the bestowing of great attention on keeping the lower extremities and the loins comfortably warm.

In a period varying from some hours to one or two days the concretions will pass (unless in cases where rupture of the duct, with a fatal issue, takes place) with instant relief from suffering. On the first passage of a gall-stone, as in the first parturition, the passage is both more protracted and more severe. During all this period we have little to do but to maintain the opiate effect; and to wait as calmly as possible the issue, being careful that the temperature is never allowed to fall. The diet should consist of a beef or mutton broth, in quantity sufficient to support the strength without stimulating.

The treatment of the jaundice of pregnancy is, of course, merely palliative. We enjoin reclusion on the right side, simultaneously with mild aperients if required, and thus moderate it until parturition withdraws the cause.

The icterus of infants is usually treated with a small dose of castor oil, but might be safely left to nature: the mother's first milk possessing gentle aperient properties.

The treatment of jaundice depending on the pressure of tumours in or near the liver, on aneurism, &c., is subordinate to that of the causal disease, which it is not our business to consider here.

We have omitted to observe, that although acute pain is often experienced by the passage of a gall-stone along the cystic duct, yet jaundice does not take place. This effect only occurs when the stone reaches the common duct, blocks up this channel, and throws back the bile into the hepatic ducts.

It is also important to remark that persons liable to idiopathic jaundice should avoid the use of milk, which seems to have a specific effect in inducing inertness in the secretory action of the liver. The vulgar opinion is, that milk generates bile, which is an error. It is far less rich in the materials out of which bile is educed than many other articles of diet, and only seems to be a bile-causing aliment from its producing, when used largely in persons predisposed, a torpor of the liver, manifested by a sallowness of the complexion, and a yellowness of the sclerotic.

We also think it worthy of notice that, next to mercury, we have found colchicum the best cholagogue. Combined so as to act on the bowels rather than on the kidney, it soon makes bile appear in evacuations before deficient of it.

Norfolk-terrace, We-tbourne-grove, West.

ON THE TRIPEDS OF THE ISLE OF MAN.

By H. L. STUART, Esq., M.R.C.S.E., Douglas, Isle of Man.

As it would be improper to allow a series of observed facts to be suppressed and erased from the field of science by casual suppositions, founded on the mere superficial observations of another inquirer, I am anxious to urge the correctness of the remarks I have made on the microscopic tripeds of the Isle of Man, having most carefully and repeatedly traced them through their mutations of form and matter, as well as having traced them through the blood and the different secretions of the body, as detailed in the supplementary paper I had the pleasure of sending to you, dated September 14th, from which observations I conclude that our persons are, here, in some sense ammoniated.

From the opportunities I have had of observing these tripeds, I cannot regard them as being either creatures or animalculæ, but that they are one source and foundation of animal and vegetable formations and growth; in fact, the magnetic agent of vital motivity—an ammoniacal alkaloid, a form of hydrogen, tending to carbonization and rust, and in that state, when deposited, uniting with the oxygen of water, and generating living animalculæ; or, when dried, producing vegetation under the action of the solar rays and pressure; for I have distinctly witnessed the result of both those processes of production,

microscopically, when no trace of any other salt or atom, but the tripeds alone, existed, and their total disappearance on the production of new forms. First, the tripeds being dried on glass, and covered with another plate of glass, without any trace of salt or other matter, or of remaining humidity, and exposed to the sun, they assume beautiful arborescent forms, resembling shrubs and trees—a volta-magnetic action. Secondly, when allowed to subside, as a sediment, in water, the speedy production of numerous living animalculæ, of round and ovoid forms, which did not previously exist; for electrical action then occurs, which is the action of election, resulting from the supervention of carbon from deposition rest or rust, (rust, *Du.*) and thirdly, when the water is poured off, and this sediment permitted to dry, it assumes the appearance of earthy matter, full of small fibrils or tendrils, like fine hairs, resembling a delicate turf or peat, none of which, except the tripeds, existed previously in the water, but all evincing so many imitations of this subtle element of life, in which sense regarding it from such a combination of evidence, together with the local exemption from cholera, it may be justifiable to suggest it as being, very probably, an antidote to that morbid influence in the earth, air, and water, as well as in the fluids of the system, which interesting development of this subject was purely owing to a series of accidents, but particularly to the accidental exposure of the atoms to the sun.

The infusoria being found in fog, rain, and snow, I am disposed to attribute their origin to atmospheric combinations of hydrogen and nitrogen, the elements of ammoniacal gas, acted on by the magnetic or solar heat and light, yielding a primitive alkaline basis* for the action of the other vitalizing agent, the oxygenic acidities of the earth, air, and water. And taking those data inclusively, they seem to suggest nitrates and carbonates of ammonia and iron, either as prophylactics, or remedies against the prevailing epidemic.

I trust I may here briefly pursue this subject, in the way of further illustration, and assuming that this object, the alkaloid triped, is the elementary principle of motion, extension, or heat, hydrogen, I associate its vitalization, when carburetted, with oxygen, the element of cold, the instrument of cohesion, and agent of sensibility, voltaism, which envelops and restrains the radiating and magnetic power of heat, and which is the result of a mutual attraction between the respective elements, hydrogen and oxygen, according to ordained creative laws.

When the two powers are combined in an uniform ratio and isolated position, a spheroidal figure is produced; when hydrogen, the element of heat, predominates, as a main constituent, an ovoid figure, or an angular and crystalline body is produced by dispersion of the motor radiation by cohesive restraint; when the element of motion exists in a still higher ratio, the ramification of branches occurs in plants, and of limbs in animals, being the operations of magnetic extension, more or less diffused. And in alternating parthenogenesis by fission or germination, those processes occur according to the fluctuating ascendancy of the motor or sentient power; the motor, or magnetic, producing fission, (Psalm xxix. 9.) and the sentient or voltaic coercing germination, being the relative antagonisms of extension and cohesion, or literally, of the opposite properties of the agent of heat—hydrogen, and of the agent of cold—oxygen. The principle of alternation being, in one instance, the result of the exhaustion of vigour consequent upon the action of expenditure or emanation, inducing increased concentration of sensibility, suppressive of action; and in the other instance, the accumulation of vigour during its suppression, in its turn diffuses sensibility, and subdues it to partition, being the two agents and springs of the resilience of vital action, which argument, applied to the present figure of the earth, is indicative of a subsequent elongation of the poles, or transition from a sentient to a motor constitution; paradoxically, abative of rotation; but is the result of a recoil or metastasis of the motor power, from the equatorial region of magnetic projection and dispersion, to the axial line of magnetic extension, inducing subsidence of periphery and of rotation.

Oxygen is represented by the annulus, and hydrogen by the triped, the emblems of elastic involution and motion, and in combination form the emblem of corporeal life, embodied in a sphere—a volta-magnetic combination, the agent of creation solely concerned in the production of water; but united with carbon or chlorine, the elements of the world, in the production of earthy or other solid bodies, carbon and

chlorine being hydrogen and oxygen in an antithetical condition, or extreme ranges of their primaries, from the latent heat of levity to the latent heat of ponderosity, and from the vitality of sensation to the torpor of insensibility; hence, influencing the forms and characters of the objects created in their various habitats, and being the sources of the various animal temperaments in living beings, and of the variations of the specific gravity of bodies in relation to the earth, air, and water, and of the special temperatures of bodies, ranging between the latent heat of hydrogen and the latent heat of carbon, as developed by oxygen, or condensed by chlorine in the mediativity of existence between the loftiest and lowest conditions of matter.

The distinguishing figure of carbon I consider to be the deltoid, a top-heavy ambulator, indicative also of incarceration or secretiveness, and the figure of chlorine to be the solid disc, at best a giddy tipsy roller, both of which, clogged and heavy from condensation, are illustrative of inertia, and imply corporeal saturation from the “juniperus Sabina,” (*ζυγὸς νυμφῆς Σαβᾶος*), from which results, in humanity, a thirst for water, once abundantly supplied, but fat seeks fire.*

However, applying this theory of characteristic emblems to the choleraic sporules recently discovered, it would appear that they are in form discoid and ovato-discoid, and are consequently chloro-carbonic and hydro-chloric, teraqueous and volatile, as is the earth itself in composition, form, and motion—“sic ita de, inde locusta.”

Without taking into account the mutations of matter, and the interdependent combinations of elements essential to the existence of corporeal varieties, or qualitative composition of divers bodies, none of which, however minute or fluid, can be absolutely simple or monogredient, yet the progressive transition from the active levity of youth to the dull decrepitude of age, as well as the ordinary and casual interruptions to a state of health, are undoubtedly assignable to the undue preponderance of those two pernicious elements, carbon and chlorine, hereditary and acquired, demonstrating their peculiarities in the characters of disease, and yet eradicable from the system, and susceptible of sanatory subjection.

I should be glad to associate the figure trinaoria, as “ΥΨΟΣ ΙΑΑΟΣ,” with the armorial ensign of this island, the emblem of motion and progress, which is life as displayed in flesh—the source of which ensign, hidden in the mists of antiquity, has at least been derived from Aspendus, in Pamphylia, as may be seen on the back of a lion in the cabinet of coins of Mr. R. P. Knight, in the British Museum, being of greater antiquity than the Egyptian triade; also, as reported in Mus. Hunter, tab. vii. No. 15.

Douglas, Isle of Man, Oct. 26, 1849.

P.S.—I have little doubt that the waters of the flooded river Nile, if examined microscopically at some period of the year, will display deltoid atoms in suspension, and which atoms are of a carbonaceous atmospheric formation, and constitute the black and productive soil of that country, teeming also with animal life.

AN INQUIRY INTO THE LAW WHICH GOVERNS THE MORTALITY OF THE PEOPLE OF ENGLAND,

FOUNDED UPON OFFICIAL RECORDS OF BIRTHS, DEATHS, AND POPULATION, FOR THE LAST SEVENTY YEARS.

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WITHIN the last twelvemonth an important addition has been made to the observations which have for their object the determination of the law of mortality prevailing over the population of England. The new observation is founded chiefly on information obtained under the new system of registration of births, deaths, &c., and is the first fruit of that system so far as concerns investigations of the general law of mortality. This observation has been published in the appendix to the second edition of the ninth annual report of the registrar-general, and consists of an enumeration according to age, sex, and locality, of all the deaths which occurred in England and Wales during the seven years 1838-44, and a corresponding enumeration of the numbers living in the year 1841, distin-

* The presence of ammonia in the atmosphere is reported by M. Fresenius, (*Athenæum*, June 23rd, 1849, p. 647,) but probably stated in too low a proportion, from the volatile circulation of that vapour: this is the hydrogen of solar radiation and nitrogen.

* Timbers are fattened from the inflammable exhalations from the graves, (carburetted-hydrogen—*lux et vita hominum*), and ozone is sometimes on the wing.