

before. Palliset and Fontenelle, Leibnitz and Pallas, Camper and Hunter, Linne and Buffon, had all suspected the existence of a former organic world distinct from the present. If laws of organic harmonies sufficient to solve these difficult questions *à priori* could have been discovered by genius alone, most assuredly they would have been so; but, properly speaking, no such laws exist. The deductions are the result of direct comparison with other similar objects—in fact, of immediate observation. They are strictly empirical observations, and not scientific laws.

Amongst the earliest of Cuvier's discoveries was that of the fossil crocodiles. Could he have foretold from them, or from all his immense researches, the existence of the monstrous forms of the extinct saurians? By what laws, what anatomical co-relations could he have foretold the existence of the pterodactyle? the dinotherium? the sivatherium? the wholly inexplicable fossil of Southern Africa. Let us suppose that at first, and for some time, the lower jaw only of the anoplotherium had been discovered, how far would the restoration have gone in the absence of the other structures? By what law could he have foretold the nature of the canine and incisives in both jaws had the fragment first seen contained only the molars? And had the head only been discovered, what are the laws by which he was to have foretold the form of the feet on his favourite principle of "a bone being given, all other structures may be restored?" Will any anatomist in the world pretend to say what must have been the form of the stomach of the anoplotherium; or of the intestines? The head of the saurians being given, could any one have predicted the form of the limbs? or the limbs alone having been recovered, where are the laws by which the structure of the head, and the nature of the animal, could have been told *à priori*? And having, after much labour and consideration, arrived at the conclusion that the anoplotherium must have been a pachyderm, or at least related to them, a follower of the great anatomist gives some reasons, drawn from that science which Cuvier rejected—the transcendental—for placing the anoplotherium in another class, and receives it in fact as an overgrown, non-developed baby—ruminant.*

Such have been some of the singular and, indeed, ludicrous results of mistaking for a fixed science a science of observation—a science which can, in my opinion, only become so when, by the application of the same instrument of research, the anatomical, the laws regulating the transformations and development of the embryo shall have been fully traced. This principle I endeavoured, some time ago, to carry to a practical result by applying one of its laws to the transformations of the forms visible and recognisable in the young of the salmonidæ, a natural family to which I had given a good deal of attention.† In the very young of any of the species, I showed that it was easy to recognise nearly all the known species, or at least all the sub-families, of the family; and as the individual grew, by retaining certain of the existing specific characters, and suffering others to escape or disappear, it assumed its ultimate specific character. The same remarks applied to the dentition of the family. But such laws require to be employed with great caution and extreme reserve to the higher forms of organised animals, and, for a time at least, to be reserved only for the more obvious and nearly-related of affiliations,—that is, amongst the species of a single natural family. Thus, the young eland of South Africa shows at first the colour and stripes of another species of antelope, and it is only when grown up that it assumes its true specific colouring or shape; the colt of the domestic horse resembles much more, in robe, colour, and mode of progression, certain species of the wild horse peculiar to Southern Africa, or perhaps to the great Steppes of Asia, than it does its own parents; and thus I endeavoured to show that generic forms precede specific, perhaps in all animals; that these generic forms imply a generic propagation as well as a specific; and that in these generic forms it seems reasonable to look for not merely all the present specific forms of the natural family, but the past or fossil and the future. Nevertheless, and notwithstanding the elasticity of so high a generalisation, I felt reluctant for the present to go further, and to extend the applications to animals of different families; and thus was scarcely prepared for the rapid extension of the principle to animals of different natural families. The anoplotherium, after the maturest deliberation, was arranged by its discoverer—the anatomist who created paleontology and geology, and introduced into zoology the only basis on which it could solidly rest—amongst the pachy-

dermata, or at least closely allied to them. For many reasons, zoologists will naturally feel averse to its removal therefrom. True, rudimentary incisor teeth have been shown to exist in the upper jaws of ruminants. There is nothing extraordinary in this: rudimentary teeth were proved to exist in both jaws of the whalebone whale—the mysticetus, by Geoffroy and myself, more than thirty years ago, but he did not think it necessary therefore to remove the whalebone whale from his position amongst the toothless cetacea, nor to make of it a huge, undeveloped, embryo dolphin. The class ruminants may have rudimentary incisive teeth, and yet be no nearer the anoplotherium or the pachyderms than they were before, at least for any practical purposes of classification. All such speculations belong to philosophy or science, and not to natural history, properly so called, which has to do only with the adult and with species as they appear to man, and not as seen through the magnifying, and it may be distorting, glasses of transcendentalists, high or low. But a few years ago the English transcendentalists proclaimed themselves to be low transcendentalists, and maintained Oken and his followers to be decidedly insane—a remark I heard from an illustrious French savan in Paris so long ago as 1822. That the same opinion of the ingenious and gifted German prevailed in England until a very few years ago is a fact beyond all dispute. Since then—that is, since the translation of Oken's work—the doctrines of this worthy and simple-minded enthusiast have been all the rage in England, taken up *con furore* on this side the channel so soon as they had been laid down on the other. The movement reminds me of the *restoration mania* in the hands of some of the theologico-geologists of England. How they guessed at the fossils!—at the troops of hyenas, (which never live in troops,) that scoured the fields of ancient Britain, dragging to their caverns everything they could collect, from the mouse to the rhinoceros! How these same persons mistook water-worn bones for bones gnawed by these same hyenas—antediluvian, of course, and wholly unlike the degenerate postdiluvians, which lead a solitary life, and never collect victuals in caverns! How the dinotherium lived—how he was made. What were the external forms of the saurians? What were the external characters, and what the habits of the dinotherium? All symptoms of highly fanciful imaginations, which disdaining the slow steps of a science they do not rightly comprehend, aim at dictating to Nature, substituting for the facts which our limited senses enable us from time to time to collect—a moral and a physical system, as restricted and as weak as human reason is proverbially admitted to be.*

ON THE

TREATMENT OF OVARIAN DROPSY BY IODINE INJECTION.

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Miss M. D—, aged twenty-nine, suffering from ovarian dropsy, consulted me on the 9th of June last, stating, in the history of her case, that her last catamenia occurred in April, 1855; that they had gradually declined for the eight months previous to their cessation, prior to which eight months they were always profuse, though regular as to time, and that her abdomen begun to swell in May, 1855, which swelling went on rapidly to the present date.

Present state, June 9th, 1856.—The measurement around the abdomen at the umbilicus is forty-four inches. She is pallid, anæmic, emaciated; the wasting, she states, has been excessive. I had the pleasure of a consultation with Mr. I. B. Brown, obstetric surgeon to St. Mary's Hospital, who, after a most careful examination, considered the cyst multilocular; that if her case were left to itself she could scarcely be expected to live longer than twelve months; that it was one of the worst forms for treatment, but that iodine injection might be tried, six ounces of the Ph. Ed., *simply through the canula by a glass syringe*, her wasted condition having been previously as much as possible repaired by iron, &c. &c. This opinion was kindly and candidly given to her sister, and reservedly to herself, and shortly after her return to Cheltenham, by the advice of her friends, she consented to the operation.

After this consultation, having felt certain misgivings as to either being able to safely lodge the iodine in the emptied cavity by the simple syringe and canula, or by such means to sufficiently wash its distant anfractuositities, I resolved on taking

* Owen on the Ruminants.

† Zoological Journal, part i. THE LANCET, July 14th, 21st, and 28th, Aug, 25th, Sept. 1st, and 8th, 1855.

* See Great Artists and Great Anatomists. London: Van Voorst,

the responsibility both of *more efficient injecting power* and *more iodine*. Accordingly I had a No. 16 prostate catheter supplied me by Weiss and Son, accurately adapted to pass through the canula of a trocar, made from a pattern kindly lent them by Mr. Brown. This tube, by a very simple screw contrivance of my own, I had attached to the moveable stop-cock nozzle of a large gum-elastic bottle.

On July 15th, at noon, in the presence of Dr. Colledge, whom the patient had previously consulted, several relatives, and Mr. Morris, surgeon, who administered chloroform, I perforated the left linea semilunaris with the large trocar, and pressing in the canula as far as I could, the ovarian mass being at the same time compressed, and the canula having to be repeatedly cleared of viscid obstruction, I evacuated twenty measured pints of a *very thick*, viscid, mushroom-ketchup-coloured fluid. Hesitating now still further as to simply injecting with the syringe, I introduced the prostate tube nearly its whole length through the canula, and, with all the compressing force I could exert on the elastic bottle, I injected ten measured ounces of the Edinburgh strength, fresh made from sublimed iodine, thus thoroughly washing the cystic parietes. The hard, irregular, emptied mass was now strongly compressed by pads and a firm flannel roller, and a pill, containing two grains of opium, was given at once.

The *scarcely to be called fluid*, examined chemically, was solidified by heat and nitric acid, and, microscopically, exhibited abundantly the large compound granular masses, ("exudation corpuscles,") granules, and numerous cholesterine crystals, &c. &c., as diagramed by Dr. Druitt in his last edition, p. 483.

I next proceed to the *sequelæ of the operation and after-treatment*. At five P.M. vomiting has just commenced, and continued violently, with scarcely fifteen-minute intervals, till nine next morning. No perspiration; pulse weak and 140; burning sensation commenced in the throat, with excessive thirst and difficulty of deglutition. The fluid ejected tasted sour, hot, and bitter, but not like sea-weed. To take two grains of pure opium in the form of pills at bedtime; brandy and soda-water *ad libitum*, arrow-root and brandy, and if possible beef-tea.

16th.—Vomiting has somewhat subsided since nine A.M. From the incessant vomiting she had not slept more than half an hour since the operation, although having taken four grains of opium. She passed in the night upwards of two quarts of limpid urine. All the other symptoms, except the vomiting, somewhat aggravated; *cephalgia is intense*; the eyes protrude and glisten; pupils dilated; no delirium. Ordered to proceed with stimulants and nutrition.

17th.—Vomiting has entirely ceased; urine high coloured, and less copious; appetite ravenous for bread, &c.; much thirst; had slept four hours last night. Ordered to proceed with wine, brandy, and nourishment.

18th.—Mouth and throat "have a more metallic feeling;" perspiration and thirst increased; appetite diminished; tongue dry and brownish; skin cooler; pupils less dilated; bowels confined; sickness returned. To have a pill, and afterwards a purgative draught. Vomited four times since taking the pill. Ordered a purgative enema.

19th.—Bowels have thrice freely responded; pulse 106, and fuller; all the symptoms of iodism are abating.

22nd.—Can get out of bed. Ordered to agitate her body gently by walking a little.

24th.—She is up and dressed, and feels quite well.

I have removed the compresses and the hot flannel bandage, which she thought loose, and that it could be borne much tightened; and with fresh compresses, and Nickel's elastic plaster, *instead of a belt*, I strapped up the abdomen with considerable pressure, with which, from its equal distribution, she is quite comfortable. Ordered to take gentle exercise in the open air, to live generously, and to keep up the pressure.

I beg to append a few observations:—

1st.—No pain whatever, nor even sensation of any kind, except "that of a bubbling," was felt in the abdomen, from the time the iodine was injected till now. She was perfectly conscious during the injection, having been merely chloroformed to prevent pain from the use of the trocar.

2ndly.—Iodine was chemically disengaged from every accessible excretion and secretion, even the saliva, perspiration, and tears.

3rdly.—It having been my lot to inject the largest quantity of iodine ever thrown into the human body, (ten ounces, Ph. Ed., which, not only from the quantity of iodine dissolved, but from its *concentration*, must equal in effect nearly thirty ounces of the English tincture,) and this with efficient

force and contrivance, both the preparation of the iodine and my operation having been public, and attested scientifically, the result of my case (which shall be faithfully forwarded in due time to THE LANCET) will be a decisive index of the *real value* of iodine as a remedy in ovarian dropsy, as I trust the above detail of the operation and its sequelæ is an exponent of the quantum of risk remedially involved.

4thly.—Should this enormous quantity prove efficient, and be in future resorted to, stimulants *freely exhibited* both during and after the operation, in my opinion, formed after close observation, reduce the remedial risk to its minimum, and the patient may be considered safe therefrom in about sixty hours.

July 26th, 1856.

P.S.—*August 25th, 1856, six weeks after Operation*.—No re-accumulation of fluid whatever. A fulcrum bandage over the elastic plaster, with compresses applied at each side of the emptied ovarian mass, and admitting of *gradual tightening*, has been kept applied. A reduction of four inches around it has been effected during the last fortnight. Miss D—is gradually, but steadily, improving in her general health, and I have not found it necessary to order any medicines. She is gone to the sea-side to-day for her amusement and health.

REPORT OF A CASE OF

POISONING BY THE SULPHATES OF COPPER AND IRON.

By H. J. COCKBURN, Esq., Newark.

Miss M—, aged thirty-two, was taken ill on the morning of May 29th. The symptoms set in with sickness, and continued until midnight, when she appeared to be in a state of stupor. On the following morning she was found on her hands and knees on the floor, retching and vomiting a yellowish liquid: a little tea was given to her which she vomited immediately. She then complained of pain in the stomach. At nine A.M. purging came on; the stools were black and yellow in colour, and of the consistence of thin gruel; she complained of great thirst and constriction of the throat, dreadful pain in the stomach and bowels, severe headache, and tremblings of more or less transient duration. At nine P.M. she drank a cupful of gruel and brandy; the vomiting and purging continued until midnight, when the sickness abated.

At six o'clock the following morning she complained of great debility, and had not strength to sit up in bed. The purging still continued; the stools were now black and watery, and pain in the bowels and extreme thirst were the most prominent symptoms. Between eight and nine A.M. she was raised up in bed, and a little brandy was administered to her. A greenish coloured liquid was observed to flow from her mouth, and at nine A.M., she died without convulsion, twitching, or sign of pain.

Post-mortem appearances, forty hours after death.—The body was remarkably stiff and rigid, the fingers were contracted, and the feet slightly arched. The skin presented a general jaundiced appearance, and round the eyes was tinged greenish black; the lips, teeth, and tongue, were stained black. On opening the chest, the lungs were found healthy; the heart was healthy externally and internally; the right side was full of dark liquid blood, the left side was empty, the ventricles relaxed. *Abdomen*: The external colour of the stomach was greenish-grey; the spleen was healthy in colour, except where in contact with the stomach, where it had discolorations of a greenish-grey and blackish-green hue. The inside of the stomach presented a greenish-grey appearance; brown spots were found closely scattered round the cardiac orifice and the lesser opening; it contained eighteen ounces of a greenish-coloured liquid. Greenish-black stains were found on the depending portion of the small intestines; the upper portions contained the same liquid as that in the stomach, and the lower were comparatively empty, and had black stains in various places on their mucous lining; the contents were black in colour. The large intestines were contracted, and contained a thick, blackish liquid, somewhat resembling treacle in consistence. The kidneys were healthy; the bladder was empty and contracted. The brain was healthy; congestion of veins, with dark liquid blood, was found throughout.

Portions of the contents of the stomach, the small and large intestines, were submitted to chemical tests, and iron and copper were found in each. The discoloured portions of the spleen were dissolved in strong nitric acid, incinerated, and redissolved. Copper was indicated both by chemical tests and