died three hours after delivery. Two persons suffering from second attacks of small-pox were noted: one had been vaccinated since the first attack, and now had the disease in the discrete form; the other was unvaccinated, and had it in the confluent form. Seven cases of variola hæmorrhagica were under my observation, of whom only one survived. Not a single revaccinated person has been admitted suffering from small-pox; neither has any nurse, helper, or workman about the premises contracted the disease, I having taken the precaution to vaccinate them.

Treatment.—I found in the few cases in which I tried stimulants that they were badly borne; and I relied on salines, with chlorate of potash, during the febrile stages of the disease, giving beef-tea, broth, milk, and eggs as the diet. If, however, symptoms of depression manifested themselves, I gave four or five ounces of port wine daily. During the period of convalescence I prescribed nitromuriatic acid and bark, with a mutton dinner and a pint of porter, continuing the beef-tea or milk with bread for supper. As a local application I simply used olive oil.

Old-street, April 10th, 1871.

A CASE OF RHINOPLASTY.

By A. B. TELFORD, M.D., L.R.C.S.E.

I HAVE great pleasure in submitting the following case of rhinoplasty to the profession.

J. R—, a cotton-weaver, aged seventy, first applied to me in the condition shown in the first engraving, which is a very correct representation. The history of the case,

FIG. 1.

as far as can be gathered, is as follows:—Fifteen years ago he was attacked with erysipelas of the face. The attack was a very severe one. Shortly afterwards he observed a small spot on the left ala of the nose, which mostly attracted his attention by its itching. A dry scab formed on the surface, which he continued to pull off, only to be followed by another larger one. Occasionally at night he experienced pain in the part. He dressed the sore with only a little simple ointment. For a number of years the disease alternately advanced and stood still. It is within the last seven or eight years that the columna nasi and the other ala were attacked; and since then it had made gradual and steady progress till it had completely destroyed those structures, was devastating the tissues of the left cheek, had advanced to the inner angle of the left eye, and doubtless would soon

have implicated the lids and eyeball. With this exception he has always enjoyed good health. There is no history of syphilis or struma. Two years ago the disease began to spread rapidly in the left cheek, the exacerbations of pain became worse, he complained of frontal headache, and he desired to submit to surgical interference.

In the various steps of the operation I was guided by Mr. Erichsen's excellent and minute description, introducing one or two modifications according to the circumstances of the case.

On the 21st of December, 1869, the patient was put under the influence of chloroform in the sitting posture, so as to avoid the inconvenience of the blood running back into the pharynx through the nostrils. I proceeded first to clear away all the disease with a scalpel, taking care to cut pretty wide of it. This necessitated my bringing the incision quite up to the inner angle of the left eye, and also caused me, on the other hand, to take away a good portion of the tissues of the left cheek. Then, with a piece of softened gutta serena, I fashioned out the new nose, laid it on the forehead, and marked it off with tincture of iodine. Then, beginning at the (patient's) right side, I raised the flap from the brow, but did not take the periosteum, as some have recommended. The right side of the flap was necessarily larger than the left on account of the corresponding deficiency in the left cheek. The flap was four inches broad and three inches and a half in length. I was very careful here of two points—first, to make the flap larger than what appeared to be required; secondly, to make its base broad, to have as great a supply of blood as possible, as, from the age of the patient, the circulation was not very strong. Having effectually checked all bleeding with torsion and

FIG. 2.

cold, leaving the opposed surfaces glazed, and all oozing having ceased, the flap was turned over from right to left. I then adjusted its raw edges to the raw surfaces of the face—the parts at the angle of the left eye and cheek requiring very careful adaptation,—applied six sutures to the left and four to the right side, and plugged the cavity of the nose lightly.

On the seventh day I withdrew the sutures and put a larger support under the nostril. He continued wearing the plug for six weeks, gradually making it larger to afford a better support as the new connexions got stronger, and to overcome the tendency to depression.

Six weeks later the patient was again put under chloroform, when I first divided the root of the flap, to form the bridge; then, making two perpendicular incisions through

the upper lip, which was very large and pendulous, and having pared the inside of the tip of the nose as well as the end of the flap, I turned it up to form the columna nasi. I inserted a needle, round which was passed two turns of thread to secure the raw surfaces in position, and applied some strips of adhesive plaster. The needle was withdrawn in a few days, when union was found to have taken place by the first intention. He afterwards wore two cylinders of gutta percha wrapped in lint. The general contraction of the new organ is less than might have been expected.

In the result there is some depression of the tip, from the patient neglecting his plugs for a week or two at a time. The disease has shown no tendency to return. There is comparatively little mark of cicatrix. The patient has ever since been quite free from pain. He resumed his usual avocation ten weeks after the first operation. Fig. 2 is from a photograph taken nine months afterwards.

In the various manipulations I was ably assisted by the late Dr. Birnie, of Whitefield, whose skill and success in the practice of surgery deserve the highest praise. The disease had all the microscopic characters of lupus.

Bury, Lancashire, April 13th, 1871.

THE
PHYSICAL UNITIES OF THE HUMAN BODY:
DYNAMICAL, PHYSIOLOGICAL, PATHOLOGICAL,
AND THERAPEUTICAL.
BY Z. C. M'ELROY, M.D.

IF the human body were presented to a competent physicist for study, familiar with the accumulated facts of its anatomy, physiology, pathology, therapeutics, and dynamics, unembarrassed by any previous theories, conjectures, or speculations concerning it, he would not consume much time in unveiling most of its hitherto impenetrable mysteries.

As the initial step, he would probably determine its ultimate chemical composition. This, chemistry has demonstrated to consist of a definite number of elementary bodies common to and widely distributed through nature, and controlled, in all that concerns the growth, repair, and decay of the human body, by the earth forces, except in, as yet, one unexplained feature, to be noticed hereafter.

But little observation would satisfy him of the intimate relationship existing between it and all organic life on the globe, whether quadruped or biped, fish or fowl, worm or insect, in both material and force. Nor would he be long in determining that all animal life was but a higher type of the vegetable, seeing that, directly (as in the herbivora) or indirectly (as in the carnivora, and those subsisting on parts of both, the omnivora), they were all ultimately dependent on the vegetable kingdom for the material from which to construct their tissues; and, further, that there is in certain vegetable products material common to them all; and that, at last, the only real difference between them lies in their forms. For in the scale of animal existences, from the lowest to the highest, each added function has behind it a special form of structure.

Nor would he fail to observe the constant stream of material, solid, fluid, and gaseous, organic and inorganic, going from without into the interior of the body, as well as the return current of material, in very different chemical states from the ingoing, at the lungs and skin, and at stated intervals, the contents of reservoirs of sewage—the bladder and lower bowel; from not only the human body, but from each and all animal existences, the quantity being the chemical equivalents of the dynamic, or mechanical, chemical, thermal, sensory, emotional, and intellectual results in a given time.

Nor would he dwell long on the determination of the problem whether organic instrumentalities performed their function at the expense of their substance, as the candle, or only furnished conditions for chemical changes in other matter, as the lamp; and his conclusions could hardly fail to be that they were like the candle, performing their functions at the expense of their substance. No candle is de-

signed to be chemically changed by combustion at once, evolving all its light, heat, and other chemical products, as in the chemical changes occurring between the materials of gunpowder in the act of explosion, but for all the light and heat evolved so much of its substance has been chemically changed into carbonic acid and aqueous vapour.

Entering on the duty of grouping the separate organs and tissues, no greater difficulties would be presented than those he had already overcome. It would be plain to him that provision must exist for the transformation of the food eaten into the forms and substance of the tissues and organs, and that from the means to these ends little or no sewerage would be necessary outside of the alimentary tract; and, consequently, all so-called organs or viscera without conduits to the exterior must of necessity act only in the interest of repair. And, further, that as each organic instrumentality performed its function at the expense of its substance, a general system of sewerage must exist to convey to the exterior waste or effete educts and material, much of which cannot be worked over again in the system, though some, as the alkalies, undoubtedly are, and perhaps others. This is found in the system of so-called absorbents.

These things determined, as they all have been, and that beyond all cavil or doubt, further scrutiny would reveal adequate means in existence for each end attained, and that nothing occurred or took place by so-called chance or accident, but all in obedience to inflexible and unchangeable law.

From this survey, and its results, the induction would necessarily follow that the two leading processes of the human body, and all animal bodies, were repair and waste—hystogenesis and hystolysis—i.e., constructive and destructive metamorphosis. And that, so long as these processes proceeded normally, and molecular forms normally reproduced, the result would be health, or ease of body. And that, when disarranged, or molecular forms lost, the opposite condition, or disease, or want of ease, must necessarily result. And from these premises the further induction would unavoidably result, that the physical and physiological unities of the human body are, and in like manner for all animal life: first, material—i.e., certain elements in definite proportions; second, form—i.e., that these elements must be worked into definite molecular forms; third, motion—i.e., chemical changes, whose unit is motion, must occur in the molecular forms of structure as fundamental conditions for the performance of a function.

Function is then seen to be the expression, or, so to speak, the language of the molecular forms of structure; and depends on form, and motion in the molecular form of the structure itself.

And these are the ideal unities into which merge all the accumulated facts of anatomy, physiology, pathology, therapeutics,* and dynamics; and they give rise to mental conceptions which correctly represent them to the mind of each student of the phenomena of organic life, physiological, pathological, therapeutic, and dynamic, which the accumulated facts themselves as certainly fail to do, disconnected from any ideal unities into which they can all be merged.

* Dr. Wilson Fox's report of a case of acute rheumatism (THE LANCET, July 2nd, 1870; American Reprint, October, 1870, p. 531) is, as he supposes, a very interesting one, and for which he deserves the thanks of the scientific world. It teaches this lesson, that efforts to control excessive motion, as evidenced by the temperature in rheumatism, or any other pathological state, by external applications to limit chemical changes, or motion, on which temperature is dependent, unaccompanied by elimination of effete educts, must most likely always fail, no matter by whom or where practised. Elimination and the control of motion was attempted, and to some extent successfully, by directly diminishing the volume of the blood stream, though involuntary discharges of very offensive educts from the bowels occurred, and persisted, in the face of some efforts to restrain, to the end of the patient's life. And these were the means, most probably, by which the life of the patient was prolonged under such unfavourable circumstances. The excessive velocity of the molecular changes, evolving the temperature, had most likely changed the molecular forms of the structure of the brain, as evidenced by the furious delirium. With loss of form, normal function ceased, and in her case for ever. The case was probably hopeless from the 3rd of June; but her only chance of life lay in retarding motion, with at the same time active elimination of the results of tissue decay, and with agencies or measures that would not interfere with the molecular forms of structure. In veratrum viride is happily combined the means of fulfilling these ends, and under such circumstances as this patient presented at midnight of the 3rd of June, a drachm dose or more of the tincture or fluid extract would have been proper; for, as it only retards motion, with active elimination, and never changes forms in any dose, very large doses are safe when indicated. A report of a case of acute rheumatism in which it was thus used will appear in *The Lancet and Observer*, Cincinnati, for November, 1870, by the writer.