

They assist in the most remarkable manner the development of the constitution in infancy and youth, and render more firm the general health.

It is not our object to describe the various maladies which may be treated by the air-bath. We can, however, affirm that it may be used with success in all the chronic diseases of the air-passages, from the most simple catarrh to the most complicated pulmonary emphysema; and its curative influence is well marked. In the early stages even of pulmonary consumption, it may be advantageously employed. In some cases of this disease which I have treated, and which have been witnessed by Professor Bouisson of Montpellier, and by Dr. Devay, the success has fully justified our expectations.

Considered in a philosophical point of view, the compressed air-bath may be regarded as the subjugation of our atmosphere, by which we can increase or diminish the pressure which establishes the equilibrium of our organisation. In fact, we know that, in decreasing the surrounding atmospheric pressure, this equilibrium is broken, and sanguineous extravasations take place. The phenomena which present themselves in aërostatic ascensions are opposed to those which take place under the influence of compressed air, by which equilibration is kept up in all the functions.

Besides the physical condition of pressure, we can, through the aid of the same apparatus, convey chemical modifications to the atmosphere, and diminish or augment the proportion of its different gases. In one word, we can so far modify the atmosphere with which the Creator has surrounded us, as to render it more amenable to our wants and necessities. Regarded in this double point of view, this discovery marks a new era, and is a blessing to mankind. I feel myself honoured in devoting my efforts wholly to this undertaking—so full of hopes and promises for the future. To develop the beneficial effects of the air-baths, and to render the employment of them more general, and thus to multiply their advantages, will be my hope, and the end and ambition of my whole medical career.

Wirksworth, August 26th, 1853.

## ON THE PATHOLOGY OF PHTHISIS.

By CORNELIUS BLACK, M.D.

As many members of the medical profession have requested from me an abstract of my researches into the pathology of pulmonary consumption—as several of my reviewers have expressed a desire for an early completion of my work "On the Pathology of the Bronchio-Pulmonary Mucous Membrane"—and as the immense chemical and microscopical labour necessary for the full and perfect investigation of the numerous data on which I proceed preclude the possibility of an immediate publication of part II, I may be permitted, in the meantime, to indicate some of the results at which I have arrived.

Assuming that the first substantive deflection from the standard of perfect health is in a deficient vitality of the formative elements of the blood, the origin, manifestation, and progress of pulmonary consumption are briefly enunciated in the following propositions:—

- I. That pulmonary consumption observes three stages.
  - a. The stage of Local Predisposition.
  - b. The stage of Deposition.
  - c. The stage of Germination.

II. That the stage of local predisposition is characterised by more or less excess of blood in the pulmonary capillaries of the affected part; that it corresponds to the first pathological condition of bronchitis and of pulmonary cellulitis; that the degree and extent of this local predisposition vary considerably; and that the resulting phenomena bear a proportionate ratio in point of severity and appreciability.

III. That the stage of deposition is attended by increased exudation from the pulmonary capillaries; that this exudation is incapable of entering into structural relation with the pulmonary tissues; that it leads to a more or less rapid thickening of the basement structure of the bronchio-pul-

monary membrane; that it likewise accumulates in the intervascular and intercellular spaces; and that the pulmonary tissue is thereby more or less consolidated.

IV. That the first appreciable sign of the stage of germination is a shedding of the epithelium of the affected portion of lung; that this epithelium does not attain perfect mucus-cell development; that in cases in which the deposition has been slow, it (the epithelium) is more granular than are properly developed mucus-cells; but that the epithelium is still more granular in cases of rapid tubercular deposition.

V. That the epithelium thus shed is not, in progressive tubercular disease, replaced; that, so long as a particle of healthy basement structure exists, the nuclear points of that structure attempt to replace such lost epithelium; but that this properly vitalised basement structure failing before such attempt at the restoration of the epithelium has succeeded, the latter is now cast off in the form of basement patches, which show, here and there, a germinating point.

VI. That the tubercular deposit undergoes, during germination, more or less development into cells; that this growth constitutes the "softening" of authors; that it takes place contemporaneously throughout each isolated and individual mass of tubercle; that it, therefore, does not first commence at either the centre or circumference of the exudation; but that it proceeds more rapidly at the circumference, because at this point the conditions of cell growth are more abundant than at the centre. At the circumference, therefore, plastic and pus-cells abound; at the centre, exudation-cells.

VII. That in the cheesy looking portions of tuberculous sputum there are very frequently, indeed, portions of nerve tubes, and occasionally of lymphatic vessels and of the minute bronchi; that, in other portions of such sputum, plates of cholesterine, the colouring matter of the bile, cystine, and urate of ammonia are occasionally seen by the microscope.

VIII. That the microscopic appearance of the nerve-tubes thus expelled shows that the nerves do not terminate in loops upon the pulmonary mucous membrane, but in bulbous expansions, to be hereafter depicted.

IX. That the foregoing observations show pulmonary consumption to consist in anomalous nutrition, and to be essentially analogous, in its steps, to inflammation; but that the term "inflammation" would be inapplicable to it, inasmuch as it fails to explain the cause of the deficient vitality of the blood-plasma, which constitutes the essential nature of tubercle.

Chesterfield, August 29th, 1853.

## CASE OF DOUBTFUL SEX.

By JAMES M. CHURCHILL, Esq.

MR. MANN'S case of doubtful sex, published at p. 720 of the ASSOCIATION JOURNAL for August 19th, induces me to give another.

I was requested to see a young person, aged twelve years, who had been brought up as a female. From the outward appearance, I should not have known that the individual was not a female. I found a penis in miniature, with distinct glans, corona glandis, and præputium, as in Mr. Mann's case; but the urethra was situated just as it commonly is in the female, and the vulva was also exactly in appearance that of a female of similar age. I delayed further investigation for a year, at the expiration of which period I found a scrotum on the right side, containing a testicle; and, six months afterwards, another testicle descended on the opposite side. Soon after this, he lost his parents, and went to London, where the male dress was adopted. He had been sorely perplexed to determine which trade would be the least likely to expose his infirmity; but at last he adopted that of a confectioner. This may be a useful hint to others of doubtful sex.

Colchester, Sep. 2nd, 1853.