buted; and in no single morbid action in young life can their influence even for one moment be disregarded. For, although the forces which are employed in the building up of the body, and in maintaining it when completed, may be mere different expressions of the same power directed in different directions, growth, development, and maintenance are so distinct in their several natures, and so uniform in their ends, that it might be excusable if, for a moment only, we were to regard them as originating from independent sources, and to be expressions of distinct powers. Daily practice proves to us that the growth of a part may go on in all its completeness, whilst its development may be arrested, or progress in an abnormal direction; or we may witness the development progressing in its normal channel, with growth showing itself either in excess or in diminished force; and yet during this time the maintenance of the whole body may be preserved. All malformations are, therefore, but results of some defective power either in the process of growth or of development, or of both; and they are always to be explained by the preponderance, diminution, or abnormal manifestation of one or of the other. Harelip, fissured palate, monsters, cerebral tumours, and spina bifida, etc., are to be explained by some defect in the natural development of the child; its growth and maintenance being, in the majority of instances, perfect of its kind; whilst instances may presently have to be recorded in which growth alone has proved defective, development remaining perfect.

THE GREATER ACTIVITY OF INFANTILE DISEASES.

We will now pass on to the consideration of another distinctive feature of infantile diseases, which characterises one and all; and that is, their greater activity when compared with those of adult life.

This pathological fact is doubtless to be explained by another physiological truth, which is applicable to adult as well as to child life, although it may be more particularly exemplified in the last:

That the activity of disease appears to be in direct proportion to the activity of the vital processes going on in a part; that in highly vascular organs, morbid processes progress more rapidly than they do in others less favoured; and that in proportion to the extent of action going on in a part will the development of morbid phenomena be manifested, when once originated.

In early life, therefore, the well known activity of the vital processes in all the organs renders them particularly prone to morbid phenomena; and those parts in which development is progressing the most actively are the most liable to become the seat of morbid action.

Again: During development and growth, cell-life is necessarily active; for it is needless to dwell upon the fact that it is through such cell-growth that all development and increase must be carried out. In morbid actions, therefore, when once originated, a like cell-growth and multiplication is to be observed; and this point is well exemplified in the case of tumours. For such tumours, when once developed in children, are generally of rapid growth; and, whether simple or malignant, their peculiar characteristic is cell-structure: the simple tumours being a rapid repetition of their original elements;

and the malignant consisting almost entirely of a cell-nature, being invariably of the so-called medullary character; the vital processes manifesting their power by the rapid growth and repetition of the original cell, which had gone astray and become a prodigal, in lieu of developing into a structure of a more perfectly organised nature. Their growth also is generally rapid, being in accordance with the activity of the other functions; healthy and diseased processes having, in this respect, a strong analogy.

As I proceed with my subject, I shall have the pleasure of illustrating more fully the truth of these remarks; and I propose, therefore, to pass on to discuss more particularly the specialities of the surgical diseases of children, commencing with such as are to be explained by some defective power either in the growth or development of the infant structure; the defects which are to be found in the digestive system having our primary attention.

[To be continued.]

Remarks

ON

DR. CHAMBERS'S ASSERTION THAT DISEASE IS IN ALL CASES A DEFICIENCY OF ACTION.

BY

LIONEL S. BEALE, M.B., F.R.S.

No wonder Dr. Chambers is alarmed. I spoke of weakening the life of the *cancer*, not the life of the *patient*! He says: "Of course, he (Dr. Beale) goes on to infer that the aim and intention of a physician should often be to weaken *life*"; and, towards the close of his spirited remarks, observes with seriousness: "This is not a mere question of verbal criticism; it is a matter of life and death to our patients". Let me at once dispel his fears. The patients are safe. My colleagues, surgical as well as medical, are, with myself and a very large majority of British practitioners, fully conversant with the necessity of giving support to patients suffering from exhausting diseases; and the pupils have daily opportunities of observing the advantageous effects of the practice.

I cannot but think my friend's fears with regard to the use of lowering treatment by practitioners in the present day are almost groundless. I would ask him if, in his experience, he knows of a single case of "pneumonic consolidation" treated by a British practitioner, during the last ten years, by "weakening life by bleeding *coup sur coup*, or by starvation"? The practice undoubtedly existed in days gone by; but, as a practice, it is now most assuredly extinct.

Dr. Chambers fears I am tending towards the condition of mind of "a certain strong-minded and strong-limbed young lady", who had no pity for people who were "out of health" or "ill", but only for those who suffered from definite disease like apoplexy or measles; and asks me if I have "never heard of people being ill of the doctor". The tendencies of my friend's mind are not in this direction. It is evident he sees every where defenceless patients suffering from nameless ailments, or "ill of the

doctor". He grapples with grave medical errors which to ordinary observers seem to have been corrected long ago. Unhappy mortals who are being killed "by bleeding *coup sur coup*, by antimony, by starvation", beg for his protection; and, like a certain ancient knight who lived but to redress the wrongs of the helpless and unprotected, the champion of "restorative medicine", bearing "life-giving oil" for the "renewal of life", rushes valiantly forth, and instantly restores them by "life-supplying food, warmth, moisture, etc."

As to the scientific questions, I would remark—

1. That I must still hold the opinion, that "when our bowels act a little more than usual; when we pass four pints of urine instead of two in the twenty-four hours; when we perspire freely; if we apply a turpentine stupe or a mustard poultice to our sound and healthy skin,"—we *do not* "necessarily become ill". Such actions are merely increased healthy actions, and take place in perfect health.

2. The author of the *Renewal of Life* should define what he means by life. To say that we "supply life by food, warmth, moisture, etc.," and to speak of the "life-giving" properties of cod-liver oil, seem to me incorrect expressions. Instead of "supply" and "life-giving", I conclude Dr. Chambers means simply "support" and "life-supporting". The terms "vital", "more vital", "less vital", "general life", "local life", all need explanation.

3. It is a misapprehension to suppose that I regarded "augmented general or local life" as necessarily associated with "augmented bulk"; nor would I maintain that there was "*more vitality* in a jelly-fish than in a sprat, in a mushroom than in a flea"; but, to take the same striking examples the author of the *Renewal of Life* has selected for discussion, I would maintain that in a living growing mushroom there is a far greater amount of matter in a *living state* than exists in the last named insect.

4. Dr. Chambers says: "Disease is a deficiency of action." I answered: "Disease may consist of an *excess of action*, or there may be *deficient action*." Dr. Chambers rejoins by saying that I uphold the "*converse proposition*" to his!

It is certain that a cancerous growth lives much faster than the normal tissue from which it has proceeded; so does pus. In a given weight of these morbid products, there would be a far greater amount of matter in a *living active state* than in an equal weight of growing cuticle, for example. In the case of cancer and pus, a much greater quantity of inanimate pabulum would be converted into living matter within a given time, than in the normal tissue. Hence, it seems to me, the *vital processes* are *more actively* carried on in these morbid structures than in healthy cuticle. In disease there may be excess, and there may be deficiency, of action; and I submit that Dr. Chambers has not shown that disease is in all cases a NEGATION, a DEFICIENCY of action, or PARTIAL DEATH.

GREAT EASTERN RAILWAY (NEW METROPOLITAN STATION AND BRANCHES) BILL. The Ophthalmic Hospital lies close to the proposed site of the station, and the governors, medical officers, and subscribers in their petition presented by the Earl of Shaftesbury, pressed very earnestly that the bill should be thrown out.

Illustrations OF HOSPITAL PRACTICE: METROPOLITAN AND PROVINCIAL.

CHESTER GENERAL INFIRMARY.

OBSERVATIONS ON THE EFFECTS OF LEAD UPON OPERATIVES.

By ROBERT H. POWELL, M.D. Lond., Physician to the
Infirmary, etc.

THE neighbourhood of lead works and mines to this hospital affords occasional opportunities for observing the pernicious effects of saturnine emanations on the human system. Those who have inspected the preparation of white and red lead, may well feel surprised that the health of the workmen and women is not more generally impaired, and severe disease speedily induced. That it is so in several instances, however, those who are called upon to treat the ailments of the sick poor of this locality are well aware.

The deleterious influence of the salts and oxides of lead presents itself at the hospital mostly in the form of muscular paralysis. The familiar affection, painters' colic, has not been so frequently noticed as one might expect. Perhaps this may be accounted for by the fact that the respiratory organs constitute the main channel of contamination. The house-surgeon, Dr. Fyfe, informs me that he has met with six or eight cases of lead-colic attacking persons engaged at the lead-works. In most of these cases, previous or present palsy was experienced; and in all the blue line on the gums was well marked. He found that purgatives, opiates, sulphuric acid, and iodide of potassium, in succession, were appropriate remedies.

The workrooms in which the manufacture of white lead is completed are every where pervaded with fine particles of lead-compounds, which must necessarily be inhaled in more or less quantity. A visitor is struck with the resemblance there presented to the quarters of the "dusty miller"; whose jocund look and hale complexion, however, sadly contrast with the wan appearance of the lead-operative. It is to be hoped that the inventive bent of our day may eventually devise some more effectual safeguard to the health of those engaged in such employment, than the imperfect contrivances at present adopted. Meantime, we have to apply ourselves to overcome as far as possible the disease thereby induced, and to trace its precise seat and pathological results.

There is now a man under treatment in this hospital for partial palsy of the upper and lower extremities, who had been engaged for two years at the lead manufactory. He states that his general health has been good until a year and a half ago, when he first suffered from lead-colic, or, in familiar terms, had been "lead-ed". He complains of no special disorder, save this local weakness of arms and legs, commencing five weeks ago. The man is aged 28 years, of slight build and well formed; presents a pallid aspect. The gums are universally marked with the characteristic blue line. No disturbance of the digestive organs is complained of; the appetite being good, and the bowels acting well. Urine normal. Progression was much retarded; but the man can stand and bear upon the lower extremities. The sensibility is increased in the lower limbs. He complained of nocturnal restlessness, sleeping only three or four hours, and then waking up with painful "startings" in the lower limbs, which are much wasted. His pulse, save being rather feeble, is otherwise unaf-