

enforces the apparent paradox, that natural death is not a part of the economy of Nature. If we could imagine human life entirely without civilisation, we should see a state where each man's hand was for himself alone, and anyone who had not full health and strength to maintain for himself the struggle for life would yield to rapid death. No one would be tided over the difficulties of the moment by the help of his fellows, or be sheltered by them during the slow degeneration of old age. The skulls of our far-distant ancestors, as Professor Humphry somewhat grimly remarks, have all good teeth; for, if their teeth had once begun to fail them in the contest for food, they would have had no chance of surviving for a day. "Decay and disease," in fact, "are by civilisation substituted for a quick and early death."

Taking one year's record of the Registrar-General's recent returns, we find eighty-nine people dying at the age of 100 or over 100; of these, ten are men, and seventy-nine women; and many other statistics go to prove that, from the earliest years, the men die more rapidly than the women. The general ratio of births to deaths is enshrined in the well known distich,

"Every minute dies a man,
And one and one-sixteenth is born;"

and we can hardly expect that there should be shown in metre the delicate differences between the ratios of male and female births and deaths; but the Registrar-General knows well that more males are born than females; and the insurance-offices know, also, that more females survive than males. Professor Humphry remarks that this is not sufficiently explained by the greater exposure of men to accidents than of women, for the same superiority of females in survival is shown in the first year of life, when the exposure to accidents is equal.

The changes of bone in old age naturally attract Professor Humphry's first attention. He describes the subperiosteal ossification, the absorption of the cancellous tissue, and general lightening of the bones, except in the case of the calvarium, which sometimes grows heavier and thicker as the brain shrinks, the absorption of the intervertebral cartilages, which reduces the height, and the softening of the costal cartilages, as in the case of Old Parr, into a state of second childhood. Calcification of the cartilages, he admits, is common, certainly, but not normal, not "the natural senile developmental process." From the 500 answers he received to the paper of questions which he circulated on the characteristics of old age, he draws what is on the whole a hopeful picture. In persons over 80, the arteries are reported normal in 60 per cent.; the rate of the pulse is nearly natural; the respiration is slightly quickened, especially in women; the bladder-troubles are not so serious as might have been expected; and there is much less liability to contagion, though we should perhaps bear in mind that Louis XV died of small-pox when he was 65. The point to which he is most anxious to call attention is the capacity for healing in old age, a point which he supported by many excellent examples in our columns some time ago (July 12th, 1884). The wounds in old age heal readily, he concludes, if they do not slough, and, perhaps it should be added, if the patient do not sink under them. In operations for hernia, there are many examples that have healed completely in three or four days; after operations for cataract, the cornea sometimes sloughs; but, if not, "the wound heals quite as quickly, or more quickly, than at an earlier period of life." So, too, the stump left by senile gangrene heals remarkably well. The difficulty of bringing about bony union of fractures of the neck of the femur, which troubles the surgeon so often in the aged, is to be attributed, Professor Humphry urges, not to senile incapacity for bony union, but rather to "the separation of the broken surfaces which commonly occurs; the buried position of the inner fragment in the cavity of the acetabulum, which prevents any overlapping of the fragments and any throwing out of uniting matter round it; as well as the comparative absence, and, when the fibrous covering of the neck is torn through all round, the complete absence of the tissue in which that material can be produced; and also by the bathing of the fractured surfaces by the synovial fluid. That these conditions, which are found to be more or less prejudicial to the bony union of fractures into other joints, and not senility, are the real causes of failure in the case of the neck of the thigh-bone, is proved by the fact that union by bone will take part at this part of the skeleton, as well as elsewhere, if the fractured surfaces be fixed in apposition, either by any kind of impaction or by well adjusted appliances; and that this will occur in the aged, there is ample evidence in our museums."

Full of matter and pithy as this little volume is, it does not assume to be a treatise or complete survey of the seventh and last scene of life; but it is an excellent example of how much may be gathered from the results of a collective investigation placed in masterly hands.

NOTES ON BOOKS.

Zur Therapie der Chronischen Herzkrankheiten. Von Dr. AUGUST SCHOTT, aus Bad Nauheim. Berlin, 1885. (*On the Therapeutics of Chronic Heart-disease.*)—This pamphlet is a reprint of a communication published last year in the *Berliner Klinischen Wochenschrift*. It gives the results of the author's treatment of chronic heart-disease by baths and gymnastic exercises, separately and combined. The cases in which good results have been obtained are those of functional disturbance, irregular and "weakened heart," and those of organic disease in which dilatation of the right and left ventricles is the chief symptom of want of compensation. Minute directions are given as to the mode of giving the baths, and the kind of baths to be used. It is recommended that patients should commence with a daily bath at the temperature of about 93° Fahr. (27° R.), containing two to three per cent. of chloride of sodium, and not more than one per cent. of chloride of calcium. As the treatment progresses, carbonic acid is generated in the water up to three grammes in the litre. The gymnastics recommended are the graduated exercises of the limbs, muscles chiefly; the success of the treatment depending on the avoidance of dyspnoea. Both the baths and the muscular exercise act, according to Dr. Schott, in the same way, not only by improving the general condition, but by acting as tonics to the heart. Thus, he explains, in a dilated left ventricle in organic valvular disease, less blood is sent into the aorta than normally, and the cavity is never completely empty; the graduated muscular exercise increases the work of the heart, and the ventricle, contracting more powerfully, tends to drive more blood into the aorta, and more completely to empty itself. By a regular and continued action of this kind, the heart "puts on flesh," the dilatation lessens, and the quickening of the pulse and other signs of the organic disease disappear, sometimes completely. It is easy to see, as the author points out, that injudicious muscular exercise will produce an opposite effect by increasing the dilatation. An important addition to the treatment by baths and gymnastics is the regulation of the diet; Dr. Schott gives peptonics (Leube's meat-solution) with the food. Some cases are quoted, showing the results obtained; they are not sufficient in number, however, for an independent judgment to be formed as to the merits of the method of treatment.

A Guide to Therapeutics. By ROBERT FARQUHARSON, M.P., M.D.Ed., F.R.C.P., LL.D. Fourth Edition. London: Smith, Elder, and Co. 1886.—In preparing a new edition of this useful text-book, Dr. Farquharson has so altered it, as to make it correspond with the new edition of the *British Pharmacopoeia*. He has omitted all notice of certain articles which have been struck out of the *Pharmacopoeia*; and, in reference to this, he expresses his regret that the list has not been much extended, and made to include a large number of useless articles which still linger in the text-books. On the other hand, he regards the list of additions to the *Pharmacopoeia* as admirable, including, as it does, all the recently introduced drugs which seem to stand on a firm basis, and which have already proved useful in practice. Dr. Farquharson's comments on the various articles, as well as the useful introductory chapters on the modes of administering medicines and on prescribing, render the book a valuable guide to students. The various articles of the materia medica appear to be dealt with according to their relative importance in therapeutics; it is, however, rather difficult to understand why guaiacum and its preparations, although retained in the *Pharmacopoeia*, are altogether omitted by Dr. Farquharson. But, as we have already said, the book is an excellent one, and the new edition deserves, and will doubtless retain, the popularity among students which has been the lot of former editions.

New Aspects of Filtration, and other Methods of Water-Treatment, The Gelatine Process of Water-Examination. By PERCY F. FRANKLAND, Ph.D.—The author has succeeded in applying Koch's method of cultivation on solid media to the detection and quantitative estimation of the micro-organisms in potable waters. He drops a measured volume of the water under examination upon a sterile gelatine film on a glass plate, protected from aerial contamination by a glass shade and a moat of solution of mercuric chloride. He finds that the risks of aerial contamination during the transfer of the water to the film are very small, at all events, in the devitalised air of a chemical laboratory. The natural processes of filtration and subsidence having acknowledged efficiency in producing waters devoid of life, Dr. Frankland has investigated the action of certain artificial processes, namely, 1, filtration through various media; 2, agitation with solid particles, followed by subsidence, and 3, chemical precipitation. One of the most interesting facts, brought out by the experi-

ments with filtering agents, is that a substance may remove living organisms entirely from a water, without sensibly affecting the quantity of dissolved organic matter in contains. The removal of micro-organisms from water by filtration through such substances as spongy iron, animal and vegetable charcoal, and coke, can only be effected by very slow filtration. The removal of organisms from water by agitation with finely divided solids, followed by subsidence, though often very perfect, is only transient, and is most marked just after the liquid has become clear. Clark's process (softening of water by lime) is shown to be capable, when carefully applied, of removing 99 per cent. of micro-organisms from waters. The want of a co-operation of biological and chemical science in the matter of water-examination has been long felt by chemists, and Dr. P. F. Frankland's work is an advance in the right direction. The method employed appears to be trustworthy and practicable to all chemists, and we hope that its adoption will lead to additions to our knowledge of natural waters, which will prove of value to mankind.

Les Bandages, l'Orthopédie, et les Appareils à Pansements, Description Iconographique. Par LÉON et JULES RAINAL. Avec 782 figures intercalées dans le texte. (Paris: J. B. Baillière et Fils). [Trusses, Orthopædic Apparatus, and Splints.]—This publication is, as might be suspected, an illustrated catalogue, prepared by a firm of instrument-makers. No direct trade-business enters into the composition of the book, however, excepting the name of the firm marked upon every instrument illustrated in its pages, and a notification that everything described therein is kept on stock, ready for immediate delivery. The French are always good in the field of descriptive literature; hence we are not surprised to find that the letterpress forms a highly finished sample of literary art. The illustrations are good, but not superior to those which adorn English works of the same class. Messrs. Rainal are conscientious, withal. In describing a pessary, we read, "ce pessaire a l'avantage, d'après l'auteur, de soutenir l'utérus," etc.; and this kind of qualification frequently recurs. We may render a service to *Les Bandages* in one respect. It forms a valuable book of reference, which should be kept in medical libraries for the benefit of British writers. The French name for an instrument, or part of an instrument, is not always to be found in a dictionary. It is easier to find such a name in a catalogue of this kind, than in a French work on operative surgery.

REPORTS AND ANALYSES AND DESCRIPTIONS OF NEW INVENTIONS IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

NEW PESTLE AND MORTAR, FOR THE READY SOLUTION OF TABLETS AND ALKALOIDS FOR HYPODERMIC USE.

By JOHN WARD COUSINS, M.D. Lond., F.R.C.S.,
Senior Surgeon to the Royal Portsmouth Hospital, and the Portsmouth and South
Hants Eye and Ear Infirmary.

The little contrivance, represented in the engraving, can be used as a measure-glass, as a pestle and mortar, and also as a solution-bottle. The mortar is divided into two unequal parts, by a tight-fitting joint, and the shorter end is graduated in minims. The cavity of the closed mortar is ovoid in shape, and the rounded extremities are adapted to receive the ends of the glass pestle.

The pestle and mortar is designed to facilitate the accurate solution of hypodermic tablets, and to render their use more easy and convenient in everyday practice.

The solution can be instantaneously prepared in the following manner.

The required quantity of water having been poured into the measure, the tablet is dropped in with the pestle, and the mortar closed. After shaking the vessel for a few seconds between the finger and thumb, the solution and the pestle are both turned into the long end, the joint is unfastened, and the fluid contents carefully poured off into the measure.

The solution is now ready to be drawn into the syringe or injector.



BRITISH MEDICAL ASSOCIATION. SUBSCRIPTIONS FOR 1886.

SUBSCRIPTIONS to the Association for 1886 became due on January 1st. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches, are requested to forward their remittances to the General Secretary, 161A, Strand, London. Post-Office orders should be made payable at the West Central District Office, High Holborn.

The British Medical Journal.

SATURDAY, MAY 1st, 1886.

UNSETTLED PROBLEMS ABOUT PNEUMONIA.

CLEARER knowledge regarding the etiology and the pathological relations of pneumonia is one of the present *desiderata* of medicine. In spite of the abundant opportunities which we possess for studying the affection, we are still in great doubt regarding its true character and its proper place in the fraternity of disease. We allude to the subject, in order to indicate the lines which, we think, inquiry might take with advantage.

Three views are held on the subject: first, that pneumonia is a local inflammation, attended by profound systemic disturbance; secondly, that it is a specific febrile disease, with a pulmonary inflammation as its constant local expression; thirdly, that the local condition is not truly inflammatory at all. We allude, of course, only to acute sthenic pneumonia, with which the epithet "croupous" has been unluckily and apparently inseparably conjoined.

The third theory may, we think, be put aside, partly because of the slender evidence on which it rests, and partly because our ideas of inflammation are so much derived from the examination of hepatised lung that, if pneumonia were pronounced non-inflammatory, it would practically mean a reconsideration of the whole question of inflammation. Two theories remain for consideration—the local inflammation theory, and the specific fever theory; the former universally adopted by the laity, the latter commending itself more and more to scientific observers.

In favour of the view that pneumonia is neither more nor less than "inflammation of the lungs," we have the constancy of the local condition, the general belief that the disease frequently follows exposure, and the absence of decisive proof of its contagious character. Against this theory may be urged the facts that the local condition and the systemic disturbance are very loosely related, the latter often preceding the former, the former usually outlasting the latter; that the etiology of "chill" is often open to grave suspicion; and, most important of all, that pneumonia undoubtedly occurs at times as a well defined and destructive epidemic. Obviously, the points that make against the "local inflammation" theory are *pro tanto* in favour of the specific character of the disease. To these may be added the fact that pneumonia pursues a fairly uniform course, with a well marked rise of temperature, and a clearly defined crisis. The frequency of hepatic disturbance and the presence of the micrococcus must also be borne in mind in this connection. Some authorities further urge that the frequent presence of herpes labialis is the analogue of a specific cutaneous eruption. We think the