firmness is most required; if you think isolation necessary, and the patient's friends will not consent to it, have nothing to do with a case of prolonged severe hysteria. Next as regards rest. Of course there are many cases of hysteria that would be much better walking about, but all those who, like our patient, are from any cause or another emaciated, flabby, and weak, must have absolute and complete rest for many weeks. It is impossible to give general rules applicable to each case, but this much is certain, that there are many patients for whom such rest is necessary. The cold and livid extremities of this case, or the flabby, wasted muscles of that, or other symptoms, will help you to a conclusion. In Miss —'s case there could be no doubt about the desirability of rest, her wasted, flabby muscles showed it. Having insisted upon it, keep to it, only moving the patient on a couch for the bed to be made. Let it be mental rest as well as bodily rest. Miss — only did a very little occasional reading or easy needlework. Let us now consider the massage, by which we mean aiding the circulation, the tissue-changes, and the removal of waste products from the skin and muscles by means of mechanical stimulation, such as rubbing, etc. I am sorry to say an air of mystery has been thrown over this part of the treatment, and it has fallen into the hands of many quacks, who try to intensify the mystery in order that they may keep the cases in their own hands. It is obvious that if the muscles are kept at rest for some time, the circulation in them becomes languid, waste products accumulate, and the muscles become flabby; as a rule, the body can renovate the muscles as recovery from disease goes on; but if we remember their great bulk, the large quantity of blood they contain, the important chemical changes that go on in them, it is not surprising that they may be sometimes aided with advantage. In just the same class of hysterical patients that we have said would be benefited by rest in bed, we shall do good by massage. You will probably perform it very much better if, remembering what you wish to effect, you set to work as you think best, than if you follow many of the quackish descriptions in print. When you have to instruct a nurse, it is best to give her some definite method, and perhaps something like this is as good as any. First grease the parts with vaseline or oil, and if the skin be very hairy it may be necessary to cut the hair; then stroke the muscles firmly several times with the edge of the hands in the direction of the venous flow. In places such as the back, where this is impossible, always stroke in the same direction, on the abdomen follow the course of the colon; next you may take up the skin between the thumb and forefinger, and rub it between them, one hand following the other in the same direction as the stroking; then thoroughly knead the muscles with one or both hands, according to the size of the part, in the same direction as already mentioned; after this, move all the joints in every direction, then you may conclude by striking the muscles with several small blows, but this is not of much importance. The full time should be about an hour twice a day for the whole body. If there is a painful spot and the case be one of hysteria, particularly direct your energies to that part; of course you will teach the nurse to avoid the bones. I have left out all the uncouth terms that are often applied to massage, in order to make it as simple as possible.

Lastly, there is the diet. Bearing in mind the wasted condition of the class of patients we are considering, and the stimulation of tissue-changes by massage, it is clear that they will require enormous quantities of nourishment. We have almost to remake their bodies in a short time. It is, as a rule, best to begin with small quantities of milk in some form at frequent intervals, rapidly increasing the quantity, and gradually adding different articles of simple diet, using plenty of nitrogenous food, till at last we get to the enormous diet of eight meals a day, and two pints of milk at intervals, that Miss — was consuming. From the writings of some, it would seem that it is of vital importance to have the diets exactly similar in all cases, but this is not so; all you need do is to remark the very simple indications for diet just given, above everything seeing that they take the huge quantities of food that such patients can eat with impunity. The reason why Miss — did not have more meat was that before her illness she was almost a vegetarian. It is very important that the nurse should be one whom the patient likes and takes to kindly; also she must be an intelligent woman, whom you can trust, and not a disciple of the professional rubbers and other quacks, who are first cousins to bone-setters. Sometimes you will find it an advantage to stimulate the muscles electrically. My object has been to show you that the method of treating certain forms of hysteria by rest, isolation, massage, and overfeeding, is rational, and leads to good results; and should you not be convinced even by the account of this patient, who was restored to complete health in six weeks, after being reduced to a mere skeleton by eight months' persistent vomiting,

which had resisted all treatment, you will be no longer in doubt if you read the works of Drs. Playfair and Weir Mitchell, to whom we owe this method of cure, which can be applied with equal success to other conditions, such as neurasthenia, and, with obvious modifications, to obesity.

THE MALADIES OF OLD PEOPLE.

By PROFESSOR HUMPHRY, M.D., F.R.S.

Professor of Surgery in the University of Cambridge.

THE following remarks are based upon the analyses derived from the accounts of 824 persons, which were given, with few exceptions, by medical men, and which were in reply to the inquiries of, and upon the forms issued by, the Collective Investigation Committee of this Association. Of these 824 persons, there were 340 males and 232 females between 80 and 90, and 92 males and 110 females between 90 and 100.

I may first observe that, with regard to *Diseases and Failures of Particular Organs*, the immunities were in favour of the women, amounting to 55 per cent., as compared with 35 per cent. in the case of the men. The affections of the urinary organs especially preponderate, as we might expect, in the men. They are, indeed, more than twice as frequent in the men as in the women, amounting to 42 per cent., whereas in the women they were only 20 per cent. In the women, brain-affections are more frequent than in the men, being 16 per cent. to 7 per cent. But the failures in the heart and in the lungs are about equal in the two sexes. It is worthy of note that 85 per cent. of the whole number are reported to be free from any evidence of rheumatic affections of the hands.

Of the various maladies, *Bronchitis* is the dominating one, and, superadded to debility, it is oftener than any other assigned as the cause of death. It is, indeed, including the common winter-cough, a very frequent malady in this climate at all times of life. In the aged it is liable to become persistent; and a slight increase coming upon the enfeebled circulation and general weakness of the old person often produces a fatal result. The demands on the activity of the respiratory functions are, it is true, diminishing in the aged in proportion to the diminished activity of the nutritive and other processes; but the respiratory capacity, which depends much upon the elasticity of the thoracic walls and of the pulmonary tissue, is liable to diminish in still greater ratio. Hence the expiratory movements, which are in great measure the resultants of elasticity, are performed incompletely and with effort, and the expulsion of mucus from the air-passages is effected with difficulty. Thus a continual source of irritation is provided, which, on slight provocation, extends into the smaller bronchial tubes, and is reluctant to quit its hold there. In a few cases the affection was habitual and had been so for years. In some there had been recurrence of attacks of considerable severity, with complete recovery, at a very advanced time of life.

It will probably accord with the experience of those present that some combination of sedative with stimulant medicines affords more relief in these cases than any other treatment.

With regard to the *Heart* we do not get much evidence of disease. Some irregularity or intermission of pulse was noted in about a fifth of the cases observed. In a few there were stethoscopic indications of valvular disease without any other symptoms. Whether the oedema of the legs observed in certain cases, and which we are familiar with as an occasional temporary affection in old people, is attributable to an imperfection in the heart, or to some other cause, I do not know. A knotty condition of the arteries, indicative probably of calcareous degeneration, is reported in 12 per cent.

The *Brain* affections, and the recoveries from them in old people, are among the most remarkable of their maladies. We are all familiar with the fact that passing attacks of unconsciousness, whether they depend upon temporary congestion, or mere suspension of cerebral activity, or other cause, are by no means uncommon, and leave often no permanent diminution of mental power. The impairment or loss of motor power in some part, as a limb, is, of course, a serious addition, forasmuch as it commonly indicates a lesion or decided failure in some locality of the brain, probably of the same nature as we find in similar attacks in less advanced age; and a paralytic seizure not infrequently ends the long but not necessarily strange or eventful history. But we are surprised to find how even these attacks in the aged are not infrequently more or less recovered from. Thus there are 25 cases in which brain-attacks associated with paralysis, in

most instances hemiplegia, and in some with convulsions and unconsciousness, were in greater or less degree recovered from. In some the recovery was complete. One man had three attacks of paralysis, at 82, 85, and 86; and one woman, in addition to several attacks of unconsciousness, had left hemiplegia and convulsions at 78, paralysis of the left hand at 82, and severe apoplexy at 89, after which she was able to get about again, though with weakened mind and a liability to epilepsy.

While considering this point we do not forget that in the aged person the brain is gradually and progressively shrinking, and the interspace between it and the skull caused by this shrinkage is being filled by fluid effusion in the subarachnoid or pia mater tissue; and there may be temporary irregularities and imperfections in this compensating adjustment of pressure of fluid on the surface and of the blood circulating in the interior, which would to some extent account for these cerebral attacks, and also for the recoveries from them. The senile alterations in the arterial coats must also be an important item; but our knowledge of the physiology of the cerebral circulation is at present scarcely sufficient to enable us to make clear deductions respecting its pathology.

In only 11 out of the 340 returns of men between 80 and 90, and in only 1 of the 92 returns between 90 and 100, is *Prostatic Disease* said to have existed; in one of these it had existed several years, and in others two, three, and four years respectively. In one the affection is said to have given less trouble than formerly. The condition of retention relieved by frequent use of the catheter may be extended with care over many years; but the enlargement of the prostate, with its associated bladder-symptoms, is, I fear, a malady from which recovery, even in old age, is scarcely to be expected. It is something to find that our reports confirm the view that it is a malady from which age gives, after 70, a gradually-increasing exemption.

Fifty-two were troubled with *Rheumatism* in some of its many forms, which include pains in the limbs, aching in the bones, etc., for which, I suppose, a remedy is not very easily to be found. Indeed, it is difficult to define precisely, or clearly account for, the various pains, rheumatic and other, which old people often complain of, and which disturb their comfort without materially affecting their health. The women suffer from these even more than the men, probably in consequence of the nervous system in them being more on the alert; 5 of the men and 6 of the women had gout, all these being between 80 and 90.

Two cases of *Senile Gangrene* were noted. They were in men above 90.

The severe forms of *Malignant Disease* are rare. One man, above 80, had rapidly advancing sarcoma of the shoulder; 5 women, between 80 and 90, had cancer of the breast; 5 men and 1 woman had epithelioma; and 1 man and 1 woman had rodent ulcer. None of these maladies are mentioned in the men or women above 90. Still, although the very aged appear to be less liable to some of the more severe diseases, such as cancers and diseases of the urinary organs, they are, on the whole, rather more liable to the ordinary maladies, the proportion of those above 90 who were altogether exempt from malady being 34 per cent., while the proportion of those between 80 and 90 was 43 per cent.

With regard to the *Eyes*, 8 per cent. are stated to suffer from cataract, 80 per cent. are said to have good sight, although 83 per cent. use glasses. Some have used glasses for many years, which is confirmatory of what I said in the account of the centenarians, that "the occurrence of presbyopia does not seem to be associated with, or to be a prelude to, inconvenience or impairment of sight beyond that which may be corrected by glasses."

The more frequent failure of the organ of *Hearing*, which is noted in more than one-half (56 per cent.) of the returns, is probably due in great measure to the liability to impairment of the delicate mechanism of the middle ear—the tympanum with its membrana tympani, its ossicles with their joints, its muscles, its Eustachian tube, and its lining membrane—in consequence of colds, shocks, and a variety of causes. But in comparing the organ of hearing with that of sight, in this respect, we must not forget that the lessening of elasticity and muscular activity—which we must assume to induce defects in hearing in old persons corresponding with the visual defects classed under the term presbyopia—does not, like the latter, admit of alleviation by an early applied physical apparatus. At least, nothing corresponding to the portable and convenient lenses for presbyopia has yet been adapted to meet the auditory defects which may be attributed to a presbyotic condition.

In 4 per cent. only is the *Digestion* said to have been bad. In 71 per cent. it is reported as good, and in the remainder moderate. Very few were troubled with constipation. In 62 per cent. the appetite

is reported to be good; and by far the greater number are stated to be good sleepers.

I am continually seeing and hearing of instances confirmatory of the inference as to the reparative powers of the aged after fractures, wounds, and ulcers, which were based upon the returns furnished in reply to Collective Investigation inquiries, and which I have already published (*JOURNAL* of July 12th, 1884). These inferences are so contrary to preconceived notions, indeed, to probabilities, that it takes some time and effort and frequent repetition to obtain for them a fair measure of acceptance; but I think the reparative powers of age are becoming more accredited, and that we shall ere long cease to have age adduced as a reason against the hopeful, and therefore careful, treatment of fractures, wounds, and sores in the octogenarian, the nonagenarian, and even in the centenarian.

What is even more remarkable than the healing powers of the aged after local lesions are the reparative powers evinced by them after illnesses, as shown by numerous examples of those between 80 and 100, and also by some of the centenarians, which have been already published (*JOURNAL* of December 11th, 1886). Indeed, the recoveries from severe attacks of bronchitis, pneumonia, apoplexy, and paralysis indicate the reparative powers after illness as well as after accident to be among the most interesting of the senile features. It is certainly strange that, when the other nutritive forces are failing—wearing out, as it were—those which are concerned in the work of repair, which may be regarded as, next to development, the highest effort of nutrition, should hold their ground so well. I have on former occasions (*JOURNAL* July 12th, 1884, and May 9th, 1885) instanced some other conditions in which the same contrast is observed, notably that of the healing of the stump after separation of a part following gangraena senilis, where the structures next to those which were unable to maintain their vitality at all often evince so much granulating and cicatrising energy. As an illustration of this, I have at the present time, in Addenbrooke's Hospital, a man, aged 77, with calcified arteries, in whom the right great toe and the left second toe have mortified and separated, and the parts left have healed well and soundly, the head of the metatarsal bone of the hallux being covered by a large cicatrix, which must have formed with difficulty at any period of life; and cicatrization is now going on rapidly on the surface left by sloughing and ulceration on the inner side of the left great toe. Attention has quite recently been drawn by Dr. Harley (see *Lancet* of June 18th) to certain facts which seem to have a bearing upon this point.

He observes that high breeding in most animals conduces to a marked diminution in the bodily recuperative capacity; also that the higher bodily recuperative capacity shown to be possessed by all men living in a rude state, whether in the form of savages or in the gipsy or tramp wanderer among ourselves, arises from the fact that the refining influences of civilisation materially diminish the animal recuperative capacity. We are familiar also with the great reparative powers exhibited in some of the lower animal forms as compared with those in the higher animals. It would seem that the greater sensitiveness—that is, irritability or susceptibility of the nervous system and of the tissues generally—which is associated with higher organisation, where we may suppose the balances of nutrition to be most delicately swung, are, in a measure, unfavourable to reparative work. We can quite conceive that the calm, quiet processes upon which it depends are less likely to proceed in an orderly and uninterrupted manner under conditions of high excitability, where stimulus easily engenders disorder, than under lower vitality and less susceptible circumstances. Herein, possibly—namely, in the lower and slower excitability of their tissues—may be found an explanation of those recuperative powers of the aged to which I have referred, and of which it is practically important that we should take due account.

ON THE OBSERVATION OF THE PUPIL AS A GUIDE IN THE ADMINISTRATION OF CHLOROFORM.¹

By HENRY J. NEILSON, M.B.

IN the study of the employment of anæsthetics in surgery, the changes occurring in the size of the pupil have not, I think, received the attention they deserve. The decided variations which take place in that organ are very remarkable, yet no definite conclusion has been arrived at as regards their relation to the different stages of anæsthesia. In the chapters on anæsthetics in the leading surgical textbooks, the pupillary phenomena are quite passed over, or are dismissed with a few words.

¹ Abstract of Thesis for the degree of M.D. presented to the University of Glasgow.