and more self-centred and hypochondriacal, and at the same time not infrequently he ceases to have any real feeling of his social duties and responsibilities. He is organized selfishness. Such I have seen pass gradually into what I would call mental paralysis.

Another somewhat similar type is that in which a first attack of insanity has changed the whole mental horizon, so that the objects in life seem altered. The girl who was a cheerful companionable person now becomes isolated, neglecting her old friends and making no new ones. Gradually she gets inclined to suspect her neighbours of avoiding her, and from this delusions arise; a fresh attack of acute mental disorder follows which causes further destruction of mind, and the end is dementia, or chronic delusional insanity.

After an attack of insanity permanent mental weakness may occur, or some special line may be marked as that of weakness. I have known an honest woman who after an attack of insanity became dishonest, and had to be classed as a kleptomaniac. A good many persons after mental illness have become intemperate or drug takers, and the friends blame the doctors. The busy active housewife may cease to be a housekeeper, and there are cases in which immorality, and eventually divorce, have followed changes due to mental disease.

A group of cases which I described under the term of "marital incompatibility" includes many such cases, and I may venture to give a sketch of one of the same.

A woman of middle age has a nervous breakdown about the menopause. She recovers, but is no longer the same person. Her servants will not remain with her. She is jealous of her husband and no longer keeps her social position. She falls out with her neighbours, and in many cases makes life with her intolerable, both to husband and children. I regret to say that some of these cases never again are able to walk in harmony.

Besides change of character and defect of ability following attacks of mental disorder, one has to recognize the tendency to frequent breaking down. I fear to compare such cases with those of loose cartilages would seem far fetched, yet they are both untrustworthy as far as strain is concerned. Any way, one of the most common beliefs is that any one who has been once insane is very likely again to become so. There is truth in the belief, but fortunately there are many exceptions; yet we have among the mental cripples to remember those whose weakness is instability.

The next great group which interests me is the cripples who result from other bodily disease. Just as here there are cripples who are weak from congenital defect, while there are others who are unfit as the result of accident or injury, so there are similar mental cripples resulting from general disease. I at times chaff my surgical friends on surgical successes when a useless limb is retained, which to the non-surgical mind would have been better away; so I see certain results of treatment of the insane in which so-called cure is limited in its utility.

Take a concrete example to demonstrate what I mean. A well-educated man, a graduate in arts of a provincial university, became a Nonconformist minister. He was capable, but belonged to unstable stock. He married, and had fair health; but anxiety and an attack of influenza brought on an attack of mental disorder, which necessitated his being sent to an asylum. After a short attack of mania he recovered, and returned to his work, but he was no longer the eloquent extempore preacher he had been. He felt his defects, worried, and later had another attack of insanity. He again was discharged "cured," but now he was unfit for his profession, and took a post as a clerk. This only lasted for a time; another attack of mania reduced him to the level of a messenger, and thus from the higher position he fell to one of pure or simple mechanical duty, and the end will be permanent inability.

I regret to say that there are very many examples of similar loss of mental power after bodily or mental illnesses. It is well to recognize that the malady is not always recognized as a nervous one. I have known persons mentally and morally changed after rheumatic fever, after typhoid, and other diseases. I used to think that any disorder associated with a high state of fever was specially dangerous.

I fancy there are cripples in this home (Sir William Treloar's Cripples' Home, Alton) who may have

suffered at the hands of inexperienced bonesetters, but I have to say that though bonesetters are a dangerous class, yet one may learn from one's enemies. I have recognized in myself that an adhesion about a joint may be forcibly and painfully but usefully broken down when passive movements have failed; and it is certain that in the cases in which there was apparent mental palsy, some deep impression, some moral shock, has started healthy movement again. I fear I cannot recommend such treatment, but I have to record the fact of its occasional utility.

And now to the conclusion and moral, if there is one, of this rather wide and discursive paper. There are many feeble-minded persons who are at present not sufficiently safeguarded. They need homes, not asylums, and probably farm-colony-like homes will be the best. Next, after attacks of mental disorder, either partial defects of mind or morals may occur, due to the tyranny of the organization, or permanent instability may arise. Lastly, we have fully to recognize that in the high state of conventional civilization in which we are the cripple can never unaided make his way in the world.

TUBERCULOSIS IN LIMEWORKERS.

By W. J. BURNS SELKIRK, M.A., M.D. EDIN.

THE action of calcium and its salts has of late engaged much attention. Experiments have been artificially performed to determine points bearing upon the action. I desire to draw attention to some of Nature's work on the subject, which seems to be curiously overlooked. I refer to cases where, by reason of the conditions of work or living, relatively large quantities of calcium have been regularly taken into the body during long periods of time. These cases are those of persons who have to work in an atmosphere laden with the fine dust of hydrate and oxide of calcium. Those that have come under my notice are the workers in connexion with limekilns and some parts of cement works. The members of communities supplied with very hard water are also worthy of consideration in this connexion.

My attention was drawn some years ago to the remarkably good health enjoyed by workers in limekilns round Edinburgh, particularly of those well on in years who had been working for a large part of their lives in an atmosphere laden with lime dust. At some of the kilns the labour is casual, and such labour I leave out of account.

Inquiries made among the workers themselves, of managers of works, of old inhabitants of the district, and medical men in the neighbourhood of limekilns, resulted in an agreement of opinion that workers in limekilns enjoyed more than average good health. In particular it was agreed that as a class they are exceptionally free from bronchitis. This being so, I wondered how they stood regarding phthisis, and, on inquiry, I found its incidence apparently nil. I do not say it is absolutely so, but I could not find a case, nor could I hear of one; nor could such persons as I asked—workers, managers, etc.—tell me of a worker in the limekilns having died of phthisis or consumption. At the Warren Cement Works, Hartlepool, where a considerable amount of lime is inhaled and swallowed by those about the works, I found an equally high standard of health and a similar consensus of opinion as to freedom from consumption and bronchitis.

I use the term "consumption," as it was among the laity that most of my inquiries were made, and I refer to bronchitis because manifestations of tuberculosis of the lungs are frequently regarded among the working classes as bronchitis.

I propose, then, the following question: Are those who inhale and swallow much lime abnormally free from tuberculosis of the lungs? Inquiry by those who have it in their power could determine this, and it would be very interesting to hear the opinion of other medical men who are or have been associated with workers in lime. The growth of the bacillus in a medium containing, say, calcium hydrate, could also be usefully investigated.

The medicinal administration of lime salts in tuberculosis is, of course, not at all recent. For instance, Warburton Begbie highly recommends calcium chloride for glands in the neck, and for diarrhoea with chronic

swelling of the abdomen. At the present day, however, the calcium salts are passed lightly over by most writers on tuberculosis. Thus in Osler and McCrae's *System of Medicine* I find, "On account of the demineralization in pulmonary tuberculosis lime salts are of value, but exert no specific action." Other authors make similar remarks, but no attention is paid to Nature's wholesale and prolonged administration as seen in lime workers.

M. Paul Ferrier, however, read a paper last year on his treatment of tuberculous patients by, so to speak, calcifying them. The administration of calcium was a prominent feature of his treatment. For this he gave many excellent reasons, and had good results to show. In the discussion following the paper, M. Rénon gave his experience of a district where lime works had recently developed. He said tuberculosis was quite absent among the lime workers, except the very alcoholic, and it had decreased among the other people living in the neighbourhood.

In Dr. Greenhow's classical papers on *post-mortem* lungs no place is found for the lung of the inhaler of lime dust. In books and papers dealing with dangerous trades no evil is attributed to the inhalation and swallowing of lime dust. It is believed that the portion inhaled is dissolved by the carbonic acid in the lungs and absorbed. That calcium salts are absorbed with great difficulty and in small quantity from the stomach and intestine need not necessarily trouble us if we remember the large quantity of iron administered for chlorosis and the small quantity really absorbed. The calcium in the intestinal canal at least prevents fermentation. Also it has been recently shown that carbon particles can pass through the intestinal epithelium and be carried to the lungs. May not lime dust also be carried through the body in like manner? Do the bodies of these lime workers then become, so to speak, saturated with lime salts? Cushny says that when quantities of lime are thrown into the blood by intravenous or hypodermic injection, the calcium of the blood remains abnormally high for some time, but all the calcium thus injected is not in the circulation throughout its stay in the body. Some of it is temporarily deposited in some unknown organ, and is gradually withdrawn and excreted after the first excess is eliminated. From this it would appear that the continued absorption of calcium from the lungs and intestine might maintain an abnormally high percentage of it in the blood. Does this occur in the lime worker, and is it preventive of tuberculosis in him? Or is his freedom due to the external lime dust being unfavourable to the life and growth of the bacillus outside the body?

It somewhat bears upon the subject that, while in towns supplied with hard water the death-rate is 16.5, in those supplied with soft water it is 19.2. That, however, only suggests inquiry as to whether the hardness of the water has any connexion with the lesser mortality.

It seems curious to suggest an atmosphere of dust for the treatment of tuberculosis; it would have been as curious some generations ago to have suggested fresh air.

At the least have we not in this lime and cement working an occupation which we may recommend to the working man predisposed to tuberculosis or already in the early stages of it? Or could a lime works be organized as a curative tuberculosis colony?

There are, for instance, many lime works near Edinburgh where observations might be instituted, and, if evidence justified it, these could be related to the present tuberculosis organization. Some of these lime works, I may say, are likely to be increasingly busy with the development of Rosyth. I am told a rapid increase of weight is commonly observed in new workers at the Warren Cement Works at Hartlepool; observations on this and other points could be carried out with reference to the lime workers round Edinburgh.

DR. WILLIAM J. BUTLER recently inquired into the history of 39 consecutive cases of chorea in children presenting themselves at the Cook County Hospital, Chicago, with the following results (*Pediatrics*, vol. xx, No. 10, p. 613): In 71 per cent. of the cases a history of tonsillitis, and in 61 per cent. of rheumatism, was obtainable, and in 28 per cent. endocarditis was present. With few exceptions, a close relationship in point of time was evident between the attacks of tonsillitis and rheumatism and chorea.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ENCEPHALOCELE.

On September 16th, 1908, I was called in consultation to see a case of "placenta praevia." The patient was 23 years of age and eight months advanced in her first pregnancy. On vaginal examination a soft boggy mass presented, which at first certainly suggested placenta, but on passing the finger round and above the mass some cranial bones could be felt. One next thought of the unruptured membranes, as in Dr. Walker's case of hydrocephaly, mentioned in the *BRITISH MEDICAL JOURNAL* of September 26th, 1908, though the feel was not that of a fluid sac, and the next pain negated this theory. I now concluded that the case was one of anencephaly, and, as at this stage the patient was seized with convulsions, chloroform was administered, and I delivered with forceps. The product was apparently an anencephalic fetus, though further examination showed that the condition was really a huge encephalocele, the brain and membranes protruding, owing to complete absence of the occipital bone. My colleague, Dr. Fred. Stoker, dissected the specimen (which had been viable up to a few days of birth), and he found, in addition to absence of occiput, that the laminae and spines of all the cervical vertebrae were absent. Two-thirds of the liver, together with the gall bladder, were displaced into the umbilical cord; the caecum was undescended; the urachus was patent; the thymus gland was abnormally developed; the metacarpo-phalangeal joints were absent, the thumbs being merely attached by a strip of skin; there was no flexion of knee or elbow joints, but marked hyperextension. The encephalocele measured 6 in. by 3 in., and it contained cerebrum and cerebellum.

Inquiry elicited nothing which could bear on the etiology of the condition. There had been no fright, shock, or "maternal impression" of any kind, nor any family history of abnormality of development. The patient made an uninterrupted recovery.

Accrington.

ALAN Y. GREENWOOD, M.D. Edin.

I was recently sent for to attend Mrs. C., aged 48, in her seventh confinement. The pains had commenced about 10.15 p.m., and the child (a fully-developed female, weighing about 7 lb.) was born at 11.45 p.m. On my arrival at 12.30 a.m., I was informed by the nurse that the baby had "two heads." Upon examination of the supposed second head, I found it to be a large sessile, opaque tumour, occupying the occipital region; no fluctuation was present, but faint pulsation could be felt; the skin covering it was rather thin, bluish, and covered with hair (continuous with that of the scalp) for about one-fourth of its extent. The circumference of the tumour was 14 in., that of the head 12½ in. The child was very cyanotic and died on the fourth day. Both parents are perfectly healthy.

This case is of interest mainly on account of the rarity of congenital encephalocele, and also because of the short period (one and a half hours) which intervened between the onset of pains and the birth of the child, which was uneventful.

London, S.W.

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INFECTIVE WARTS.

THE note by Dr. Walker on this subject in the *JOURNAL* for October 10th recalls to my mind the occurrence of warts in several members of a family under circumstances which strongly support the theory of their infective nature. The family in question had in their house for some months a maid who suffered from numerous warts on the hands and arms. Shortly afterwards it was noticed that the children, three in number, had all developed warts on the hands, which were attributed to infection from the maid. The youngest member of the family, a boy of 5 years of age, developed warts on the adjacent sides of two fingers one after the other, and in such exact apposition to one another as to suggest infection by contact, a conclusion which is still further confirmed by the additional observation that now this boy, who has a persistent habit of biting