

nary working man can appreciate. The growth of towns at the expense of the country is every day placing a larger proportion of the people in circumstances unfavourable to their health, both bodily and mental; and herein is probably one cause of the ever-increasing prevalence of insanity, or rather, perhaps, of its ever-great aggregation in asylums. An insane person in a town cannot be permitted the same amount of liberty as in the country, and hence in cities removal to an asylum becomes more a matter of necessity.

On Metalloscopia. By Dr. M. BERNHARDT, of Berlin. (From the "Berliner Klinische Wochenschrift," No. 10, 1878.)
Translated by E. G. GEOGHEGAN.

It is now almost thirty years since Dr. Burq first observed the favourable effect produced by the external application of different metals on patients suffering from various forms of anæsthesia. Burq remarked that the same effect was not produced by the same metal in all cases, but that the therapeutic success was due in one case to gold and in another to iron. This fact led him to assume that, in cases where one metal proved beneficial when applied to the skin, still better results might be obtained by giving this patient a preparation of the metal that suited him for internal use, and thus promoting a constitutional action. But even his first assertions met with a cold reception, and his later assertions of the success obtained by internal use of the metals received quite emphatic denial from the profession, so that the whole question fell into discredit. Nothing daunted by this, and fully convinced of the accuracy of his observations, Burq applied to the Société de Biologie in Paris, to appoint a committee to test his assertions impartially, and report on the results of their investigations. A committee, consisting of MM. Charcot, Luys and Dumontpallier, was appointed, and on the 14th of April, 1877, M. Dumontpallier, as speaker, delivered the following report:—

The first trial took place with a girl of sixteen, who had suffered for some years from hysteria. Her skin and muscles on the right side were completely anæsthetic, and an examination made by Drs. Gellé and Landolt proved that the functions of the right ear and eye were very imperfect. Even deep puncture with a needle excited no sensation on the right side, and was followed by no hæmorrhage, showing that the capillary circulation was greatly impaired. Pressure over the right ovary was acutely felt.

We may easily imagine that a commission with Charcot at their head, and experimenting on a patient who had been several months under his care in the Salpêtrière, took every precaution to ensure themselves against errors. Choosing this patient, they applied bracelets made of separate pieces of gold to her right arm and to the supra-orbital and temporal region. In 15 to 20 minutes the skin of these

parts grew red, and the patient declared that she felt a sensation of prickling and warmth. Even superficial puncture produced pain, and drew blood. Hearing, too, improved, and the right eye could distinguish colours plainly.

Similar experiments were tried with other patients, but we shall only report the important results obtained in cases where the experiment was repeated often, and all cautelæ observed. On all occasions the patients' eyes were blindfolded, and they were not allowed to know what was being done to them. It was immediately perceived that, in addition to the return of sensibility to the parts which were for a certain time covered by the pieces of metal, a "*dysæsthesia*" was effected in the surrounding parts. Thus, for instance, a patient, on whose arm a cloth dipped in boiling water was laid, complained of a sharp sensation of cold, and *vice versa*. In cases where gold produced an effect in recalling the sensibility, etc., they found that zinc, copper, or iron was followed by no reaction, whereas in another case, one of these last-named metals might be active and none of the others. Further experiments showed that, on application of one of the metals, gold for instance, not alone did anæsthesia of the skin disappear, but that a loss of muscular power on the anæsthetic side, which had been dynamometrically proven before the experiment, was likewise regained, and that, too, in direct proportion to what was lost by the other side, which had previously been the stronger and quite healthy. The same was the case when the temperature of the hand, which had recovered sensation, was taken. The temperature was, before the experiment, 4.5° F. lower, and afterwards, 3° F. higher, than that of the unaffected hand. However, two or three hours after the experiment, the former conditions returned, the patients were weak, exhausted, and sleepy, and complained of headache. Dr. Gellè was the first to call attention to the peculiar phenomenon that the patient lost as much sensation and force on the unaffected side as he gained on the diseased; and he convinced the Commission of the accuracy of his observations by auditory tests. Landolt proved the same as regarded the ocular power of distinguishing between colours; and finally the Commission found a similar process taking place in the sensibility of the skin. It was a case of *actual transference (transfert)*.

But the most interesting discovery made was that not only patients suffering from hysteria (a disease at present regarded as functional), but also those afflicted with hemianæsthesia due to an organic lesion, experienced improvement from this treatment with metals.

A married woman, aged 54, was afflicted for many years with hemianæsthesia and hemichorea of the right side, and also with hemiplegia, consequent upon cerebral disease. Gold, copper, and zinc were tried in this case without success; iron alone brought back sensation, after 20 minutes, to the points of application, and in the course of a few days to the whole right side of the body. There was also a simultaneous reduction of the choreatic movements. Further

applications of small iron plates to the right half of the tongue, and right side of the nose, restored the functions of taste and smell in these parts. Similar success was achieved in another case of cerebral disease. It is, moreover, a striking fact that these favourable results, unlike those obtained in the cases of hysteria, were of a *lasting* character.

Charcot and several members of the Société de Biologie were inclined, from the commencement, to explain the facts by the supposition of weak currents produced by contact of the metals with the skin. It now became the duty of the Commission to test the truth of this theory, which they accordingly took in hand with the help of Dr. Régnard, Professor Bert's assistant. It was then found that application of gold, coined or uncoined, did actually produce currents which deflected the needle of a very delicate galvanometer between three and twelve degrees. Taking now a patient, who reacted towards gold, and on whose side (affected) two gold pieces produced a current of 2° deflection, and applying a galvanic current of the same strength, but produced in the ordinary way, it was found that the same results followed as were described in the case of gold, *i.e.*, the skin grew red and warm, and blood flowed on puncture, &c. Copper produced no effect upon this patient. Having observed that plates of copper gave a deflection of 15°, they tried a galvanic current of this strength, but there was no reaction.

Thus, when we are acquainted with the "metallic idiosyncrasy" (if I may be allowed the expression) we can obtain the same results, *viz.*, return of sensation, and increase of temperature and muscular power, by means of a current of equivalent strength. The interest of this fact was heightened by a new discovery. When a patient reacted to a current of 35°-40° (deflection), and the strength of the current was then raised to 50° or 70°, the effect was lost, but returned if the strength was raised to 90°. Régnard,* who discovered these facts, formulates them as follows:—"In the galvanometric scale there are certain points, constant in each individual case, at which sensation is recalled by the action of the current, whereas this does not occur when the current is either weaker or stronger, however long it be applied." These "points" Régnard designates as "*neutral points*."

To conclude our report of the points proven in this question, we wish to repeat the words of the speaker on the subject of the "transfert de la sensibilité"—as yet the most interesting and obscure phenomenon met with.

When the presence of hemianæsthesia was clearly demonstrated, by methods which one might call barbaric, only that they were applied to parts altogether devoid of sensation, and when further this anæsthesia had yielded to the influence of metals or an electric current, the Commission found (and verified the fact by a frequent repetition),

* Régnard applied currents of the same strength as the physiological nerve-currents.

that the restitution of sensation on the diseased side was effected at the cost of the unaffected side. Thus, if the forearm or leg on the anæsthetic side regained its sensibility, the corresponding parts of the opposite unaffected limb lost theirs. When a more general character was given to the experiment, and a current passed from head to foot on the anæsthetic side, it was seen that the sensibility diminished on the unaffected side in the same degree and same direction as it reappeared on the other side. The organs of special sense on the sound side suffered a similar diminution of function, corresponding to what was regained by the organs of the affected side. Finally, we may mention that it may happen that the restored sensibility and muscular power may be again lost, if the metals are applied too long (anesthésie et amyasthénie de retour). In the above lines we have given an extract of the exhaustive report prepared by the Commission. In a letter lately addressed to me, Charcot gives his personal experience of the matter in the following words :—

“The influence of metallic applications on the phenomena of anæsthesia in hysterical cases is quite beyond all doubt. But we have before us a matter of ‘*metalloscopia*’ exclusively, having nothing whatsoever to do with ‘*metallotherapia*.’ For the existence of any therapeutic action is as yet quite problematical. I must, however, state that Burq’s experiments were carried out in four cases of inveterate hysteria, and three of these improved greatly, apparently under the influence of the treatment, which seemed to affect every symptom of the disease, whilst the fourth may be regarded as actually cured, and has acted as nurse in the wards for the last four months. Still I think we ought to wait some time before expressing our opinions of the therapeutical part of Burq’s theory. As to the question whether the application of metals produces effects on anæsthetic parts in cases of hysteria alone, I may merely mention that, to my great astonishment, all qualities of sensibility were quickly restored in a case of complete hemianæsthesia resulting from an organic lesion (the case which I have described in my lectures on posthemiplegic hemichorea). Since then I have observed a similar case treated with the same result. In these two cases of cerebral anæsthesia resulting, I repeat, from an organic lesion, the results obtained were definite and lasting, as it is now a year since the experiment was made. On the other hand, in a number of cases of hysteria submitted to this treatment, anæsthesia returned to its previous extent in 30 minutes, two, or at the most, in twenty-four hours. This *transitory character* of the phenomena appears to me to be a mark of *hysterical anæsthesia*, distinguishing it from the form resulting from *cerebral organic lesions*.

“I have tried the application of metals in various forms coming under the head of ‘*spinal anæsthesia* due to organic disease’ (myelitis, ataxia, &c.), *without obtaining the very slightest result*.

“The above few words is all I can say of *metallotherapia*, or rather *metalloscopia*. I have latterly varied the form of the experiment,

and am convinced that this will be a most interesting object of study. Perhaps the materials for the formation of a theory may be found in these researches, but certainly at present we are met by very unexpected facts of a remarkable and strange character, the objective reality of which cannot be doubted. Burq, of course, in his enthusiasm for the facts of which he is discoverer, goes a little further than quiet observation allows; still I am convinced that he has conferred a real benefit on science by his delicate and ingenious researches which open a new and fruitful field of research."

M. Charcot further observes—"It seems that Wichmann ('Zur Diagnostik,' Hannover, 1800, Bd. i., p. 159), must be regarded as Burq's predecessor in metalloscopia, from his 'Ideen Zur Diagnostik.'"

"Feeding v. Fasting."

Dr. Campbell, of the Carlisle Asylum, in the "British Medical Journal" of February 23, makes some very sensible and important remarks in regard to persistent refusal of food in hysterical girls and others. After reviewing the cases of the "Market Harborough Case" and "the Welsh Fasting Girl," he thus comments on them and their treatment, as it was, and as it ought to have been:—

To my mind these two cases were much alike, and were both cases of Hysterical Insanity. No one can be considered sane who, without cause, starves so as to endanger health and life. Should cases of "Fasting Girls" continue to crop up, I think it would be well if the subject were brought under the notice of the Commissioners in Lunacy, as, at their instance, enquiries are at times made into cases where sanity is dubious.

It is quite admitted that the standard of Sanity and Insanity varies much in different parts of the United Kingdom; but when, as the result of some mental change, a patient acts in such a way as to endanger his own life, or even to become a local nuisance, it would be well at least to make a careful examination into his sanity.

Old ladies who keep a houseful of cats in town, thinking they have souls, find it now-a-days scarcely safe to carry out their opinions; and the race of hermits who lived in dirt and discomfort has become almost extinct by the active discharge of duty of the Country Relieving Officers.

In the case of the "Welsh Girl," eight days of careful watching and the death of the girl clearly prove that even "Fasting Girls" cannot live on air. I think there can be little doubt among medical men or others that human life can only exist for a short period (limited to days) without nourishment, and that if ordinary food be taken into the system evacuations must follow, though of course they