observation," he says (Willis's translation), "is therefore requisite in every science, and the senses are frequently to be appealed to. We are, I say, to strive after personal experience, not to rely on the experience of others; without which, indeed, no one can properly become a student of any branch of natural science, nor show himself a competent judge of what I am about to say on the subject of generation; for, without experience and skill in anatomy, he would not better understand me than could one born blind appreciate the nature and difference of colours, or one deaf from birth judge of sounds." And again: "For, although it is a new and difficult road in studying nature rather to question things themselves than, by turning over books, to discover the opinion of philosophers regarding them, still it must be acknowledged that it is the more open path to the secrets of natural philosophy, and that which is less likely to lead into error." That Harvey's method was the right one, is proved by his own brilliant success and the subsequent failure of Descartes and his school. "Descartes," says Daremberg, "a plutôt imaginé une bonne méthode logique qu'il n'a créé un système de philosophie; il a toujours montré beaucoup de goût pour les sciences physiques à cause de leur côté positif; mais ce goût si légitime, s'il eût renfermé dans de justes bornes, l'a complètement égaré lorsqu'il a voulu pénétrer sur les domaines de la physiologie..." Descartes is stated by the same author to have practised dissection and studied medicine with equally little success. If Descartes failed in his use of facts, wherein lay the cause? The answer may shed some light upon the question of the relation of thought to medicine. Descartes' failure was in the main due to the circumstance that he did not hold true to his own professed method. He rested his conclusions, indeed, upon facts; but, to quote from Whewell, "his system was nevertheless a glaring example of that error which Bacon had called *anticipation*—that illicit generalisation which leaps at once from *special* facts to principles of the wildest and remotest kind".

Two further illustrations of a more purely clinical character may be noticed with advantage. The first is a curious example of the parable of the mote and the beam. Broussais, the great medical iconoclast, if I may so describe him, at the beginning of this century, set himself to correct the erroneous observations of the ancients; and, in his well-known remarks on the fevers, he complains of the illicit inferences from incomplete knowledge on their part, and their founding a number of different types of fever upon accidents and not essentials, such accidents being of no more significance and just as much to be expected as the varying shapes of men's noses. Broussais, guided by analogy of symptom and the results of treatment, arrived at the conclusion that all fever was but the expression of local inflammation, a conclusion not borne out when tested by his own statements. Another example in our own times is that of the germ-theory of infectious diseases; here, again, facts are too few as yet to justify more than provisional hypotheses.

The above examples of failure in the use of facts are noticed without fear that they will justify the opinion that medical questions are not amenable to scientific method of treatment, but simply as instances of the need of Bacon's warning. I grant that medicine needs such perhaps more than most subjects, from the complexity of many of its problems.

It has been no discredit to other subjects that wrong conclusions have been arrived at. Tentative hypotheses may work good and not ill, if only their tentative character be kept in view. The object of medical inquiry is like that of other studies claiming to be sciences, to evolve order out of confusion, to reduce facts to ideas.

The recognition of typhoid fever was the result of the synthesis or grouping of observed facts, and their re-distribution or analyses. There is perhaps no better illustration of the successful reasoning upon observed facts and experiments than sea-scurvy.

Rickets, first investigated by Glisson of this College, is another illustration. An example or two more will mark the further advance. The rise of body-temperature in continued fever is an observed fact known even to the ancients, but it had not for them the meaning it had for us; [they knew nothing of the measurement of tissue-change by heat-units and chemical equivalents.

Inflammation again (its very name suggests the leading idea), used to be defined by its more obvious symptoms, pain, heat, swelling, redness. Accurate microscopic examination has cleared up the meaning and relation of each to other of these.

It may be objected that these examples are taken from pathology, and that the treatment of individual cases is certainly empirical; so far as treatment has to go in advance of pathological knowledge this is true, but each case of illness is a medical problem presenting two orders of facts; the one essential (the result of the disease), the other experimental (induced by a therapeutic agent). It was Broussais' error that he considered too much the latter, and overlooked the essential.

The opportunities for correct observation have been wonderfully multiplied during this present century in the introduction of instruments

—the stethoscope, microscope, sphygmograph, clinical thermometer. Accurate observation and exact reasoning are needful for the successful solution of complex problems. Where could the student of medicine better acquire those qualities than in the place where accuracy is the guiding principle of the work? Yet surely it were needless to urge it in this place, in the very home of medicine, unless ill-tongued rumour tell true. "Dr. Caius," says Fuller, "may seem to have bequeathed a medicinal genius unto this foundation, as may appear by this catalogue" (then follows a list of twenty-seven eminent men, some of whom have been this day commemorated), "all bred in this house of Doctors of Physic and extant in my memory, such a little Montpellier is this College alone of eminent physicians."

This is the record of the past; shall we rest content with a memory unheeded of the present, unhelpful of the future? Surely not. If the College be true to her traditions and perceive the fitness of times, she will best commemorate her benefactors by honouring their work—she may once again number among her sons of medicine the foremost men of their generation.

Ἐμβλεφατε εἰς τὴν στερεὰν πέτραν ἣν ἐλατομήσατε.

CLINICAL LECTURE

ON A

REMARKABLE CASE OF ABSCESS OF THE DURA MATER AND BRAIN, FOLLOWING A BLOW ON THE HEAD.

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(Concluded from page 845 of last number.)

I HAVE now related to you in detail the clinical and anatomical facts which were observed in this case: let us next inquire what are the questions which it naturally introduces to our consideration, and what light it throws upon them. In doing so, I will endeavour to restrict my remarks as far as possible to points having more or less direct reference to the case before us.

Let us, then, consider what bearing this case has, first, on the causes, the symptoms, and the diagnosis of cerebral abscess; secondly, on the latency of cerebral abscess (this will lead us to consider the probable period at which the cerebral abscess in this case was formed). In the third place, we must dwell for a moment on the remarkable temperature we encountered in the course of this case, simulating as it did an anomalous kind of intermittent fever. Fourthly, we may attempt to answer the question, Was surgical interference called for at any period in its course? Fifthly: Had the affection of the elbow-joint anything to do with the cerebral mischief; and, finally, does the case throw any light on the question of cerebral localisation?

Of the causes of abscess of the brain, one of the commonest is inflammation of the middle ear, leading to caries of the petrous portion of the temporal bone; and in this disease the suppurative inflammation often extends, as it appears to have done in the case before us, by exciting phlebitis of one or more of the cerebral sinuses and their tributary veins, which become occluded by purulent thrombi. Injuries of the skull attended with fracture also not infrequently lead to the formation of cerebral abscess, as may readily be understood; but abscess of the brain arising from a blow on the head without fracture is a comparatively rare occurrence. It is, however, well known that this may occur, as Sir William Gull long ago pointed out. "In such cases," he says, "the injury excites inflammation and suppuration of the diploë of the bone, and the suppuration extends and involves the brain." But it was not exactly so that the abscess of the brain arose in this case, for examination of the bone reveals no evidence of suppuration in its substance. It would seem that the primary seat of suppuration was that part of the dura mater lying immediately under the injured and inflamed bone. Here a small, distinct, circumscribed, and encysted collection of pus was formed; the suppurative inflammation extended to the portion of the longitudinal sinus beneath it, which became plugged by a thrombus; and thence it further extended into a large collateral tributary vein, and excited suppurative foci in the two portions of the cerebral substance which I have described before.

The symptoms of cerebral abscess are by no means characteristic; they must necessarily be dependent on the situation of the abscess. They may, as we shall presently see, be entirely absent. Pain in the

head, continuous and severe, is generally regarded as one of the most constant, and sometimes is the only, symptom present for months. In this case, pain was by no means prominent until the appearance of other cerebral symptoms. Rapid emaciation has also been pointed to as a striking feature in many cases, and we remarked the great emaciation in this case even when the patient protested that he felt quite well; but, since it was coincident with the occurrence of sharp febrile paroxysms, they seemed sufficient to account for it.

The mental symptoms in this case were precisely those which have been described by Sir William Gull. "Now and then," he says, "the only (mental) symptoms were a heavy expression, a disinclination to speak, and indifference to surrounding objects." Slow and difficult, but perfectly clear cerebration is the description I should apply to the mental condition of this patient even to within an hour of his death. If you asked him a question, after waiting a little time, and just when you thought he could not have heard it, and were on the point of repeating it, the answer would slowly come.

I have already said that the symptoms of cerebral abscess, especially those connected with sensation and motion, must necessarily depend on the locality it occupies; and from this point of view it has been pointed out by Huguénin, in the twelfth volume of Ziemssen's *Cyclopaedia*, that, in the case of abscess of the temporal lobe, where our patient's largest collection was situated, "the difficulty of diagnosis is increased by the circumstance that no bands of fibres, which are direct conductors of sensibility or motion", pass through this lobe; and therefore an abscess in that lobe "may attain a considerable size, and may cause general symptoms of compression before any distinct symptom of local disease arouses the suspicion of a localised affection of the brain; and for this reason the acute abscesses belonging to this category, in the great majority of cases, have not been positively diagnosed".

If general convulsions occur in the course of cerebral abscess—and our patient had one such attack—they must be due, as the same author points out, to some cause that acts on the entire brain, such as interruption of the circulation by the pressure of the swelling focus.

Practically, the diagnosis of cerebral abscess depends on collateral circumstances. Given certain symptoms, do they or do they not coincide with a known or possible injury to the skull, or with disease of the ear, or with the coexistence of suppurative foci elsewhere?

But the diagnosis of cerebral abscess is proverbially difficult, and chiefly on account of the latency of its symptoms, of which I must now say a few words. Sir William Gull says that "abscess" following injury to the head "may remain latent for months or even longer"; and, again, "an abscess may lie latent in the brain for many months, and then acute symptoms may suddenly set in and the patient die in a few days". The writer in Ziemssen whom I have already quoted is equally emphatic on this head. "An acute encephalitis following a non-perforating injury of the head can run its course without one having a suspicion of its existence"; and, again: "Cerebral abscesses have been found especially in the temporal lobes, the existence of which had not been betrayed during life by a single symptom".

So it is certain—and I wish particularly to call your attention to this—that, with the history of the recorded observations of cerebral abscess before us, it is impossible to form any positive opinion as to the period at which the abscesses were formed, which we discovered at the autopsy of the case we are discussing. They may have existed when he first came into the hospital. They were undoubtedly not very recent, for they were both encysted. If, however, as Dr. Ferrier believes, the smaller abscess in the ascending frontal convolution occupied the seat of the facial centre, and so gave rise to the partial facial paralysis which was observed, the formation of this abscess and the occurrence of the facial paralysis ought to have coincided in point of time; and the facial paralysis was first noticed on December 21st, *i.e.*, forty-six days after his admission and twenty days before his death.

Next let us consider the question of temperature, which ran such a remarkable course in the case before us, simulating an anomalous kind of intermittent fever. The fact that the course of cerebral abscess may simulate that of some forms of fever had not escaped the notice of Sir William Gull, for he says: "Patients suffering from cerebral abscess may have symptoms so closely resembling continued fever, that it is extremely difficult, if not impossible, with any degree of certainty to say whether it is a case of fever or of organic disease of the brain." Huguénin, in the twelfth volume of Ziemssen, says: "Two cases occurred to us which, in consequence of our total ignorance of etiological factors and the entire coincidence of the symptoms with intermittent fever, were regarded as such." One of these cases he reports in full, and it bears some resemblance to this case. The case began with a high temperature (105 deg.) and sweating; then freedom from fever for four days. No head-symptoms. Then again a rise of temperature extending over three days, and reaching 103.2 deg.; and "energetic

treatment with quinine". Then seven days of freedom from fever, but occasional vomiting, "attributed to quinine"; and frequent complaint of headache. But there was no further rise of temperature, and the resemblance to an intermittent or remittent form of fever was by no means so complete as in this case. Moreover, the case ran its course (as reported) in twenty days. Now, in the case before us, for twenty days no medicine was given; for we were anxious to discover the natural type of the fever, and it was not until the commencement of the third paroxysm that we began to give quinine. In Huguénin's case, an abscess was found in the left frontal, and another in the right temporal lobe. "This case",* the author adds, "shows that abscess of the brain may be mistaken for intermittent fever, especially for one of irregular form; and the error is hardly to be avoided."

The occurrence, however, of a continued range of subnormal temperatures coincidently with the development of cerebral symptoms, and after a prolonged intermittent pyrexia, seems to be now recorded for probably the first time.

I would call your attention also to the variations in the temperature on the two sides of the body, which were most carefully noted by our house-physician, Mr. Matthews, from the onset of the cerebral symptoms to the patient's death. Though these variations were at times considerable, differences of from 1.4 to 2 deg. being four times registered—*viz.*, 1.4, 1.8, and 2. deg.—no regularity whatever could be traced in these variations. Sometimes the left side would give the higher temperature, sometimes the right; so that these variations, though interesting to observe in themselves, were of no diagnostic value.

Another question which I proposed for consideration was whether surgical interference was called for at any period in this case. Mr. Lister, who was present at the autopsy, appeared to think that trephining, with antiseptic precautions, might have been of value, if it had been resorted to as soon as the cerebral symptoms became manifest. I do not for one moment doubt that it would have been a perfectly justifiable proceeding; and, had I had an opportunity of consultation with Mr. Lister at an earlier period in the case, I should have readily consented to the operation. The abscess in the dura mater would thus have been evacuated, and the pressure of its contents on the surface of the brain removed; but I can scarcely doubt that, at any rate, the large collection of fluid which we found in the temporal lobe, enclosed as it was in a thickish cyst, was of earlier date. The purulent phlebitis also probably existed some time before the onset of cerebral symptoms; so that I cannot think the patient's life would have been saved by surgical interference, unless this had been had recourse to long before the symptoms appeared which seemed to justify it.

Then, again, what was the meaning of that curious affection of the left elbow-joint? It was not pyæmic; it disappeared completely after blistering, and no trace of mischief was found in the joint after death. Had it any relation to the brain-mischief? I do not know.

Finally, does this case throw any light on the localisation of cerebral functions? Every case of cerebral disease which comes into the *post mortem* theatre is now anxiously interrogated with regard to this important pathological and physiological question. Now, there was a local muscular paralysis in this case; that is to say, there was slight paralysis of the muscles of the lower half of the left side of the face. The loss of power in the left hand and arm was only temporary. It must be admitted, therefore, that the seat of the lesion in this case tended to confirm the theory of localisation; for the abscess in the ascending frontal convolution was situated in that portion of the surface of the brain which has been termed by Ferrier and others the facial centre: the portion which appears to preside over the movements of the lower facial region. This centre—*i.e.*, the facial—is in juxtaposition to the centre for the arm and hand; and this again is consistent with the temporary loss of power observed in the left hand and arm in this case. It is important also to notice that speech was unaffected in this case; and this affords a further confirmation of the almost universal association of aphasia with disease of the left hemisphere. "Had the lesion been in the corresponding part of the left hemisphere," as Dr. Ferrier observes in a note to me, "some affection of speech would certainly have been observed."

TAPE-WORM IN A FISH.—A fishmonger in Berlin, who had lately received a considerable supply of fishes from the German Ocean, found a tape-worm of the length of two-and-a-half *mitres* in a carp. The worm belonged to the class *Coryophyllacus latus*, which species is occasionally met with in the intestines of the carp, the pike, and some birds who mostly live on fish. It is possible that a like cause may have more than once been the origin of tape-worm in the human being.

* The full report of this case will be found in Ziemssen's *Cyclopaedia*, vol. xii, page 765.