mentally separate in origin, the former being derived from the epiblast, the latter from the mesoblast. According to Gaskell, the nervous system also was of mesoblastic origin; but both of these symptoms might be developed from a part of the mesoblast which was originally derived from the epiblast. The intimate connection in origin between nerve and muscle was corroborated by the wandering of nerve fibres to arrive at the muscles with which they were developmentally connected, although a short cut could be imagined more advantageous. For instance, the elongation of the cervical region in the higher vertebrates caused a remarkable circuitousness in the course of the spinal accessory nerve fibres, and of the fibres from the dorsal region which dilate the iris. On the other hand, the regeneration of motor nerve fibres after their division supported the view that nerve and muscle were fundamentally separate, and that their union might be subsequent. It is not even certain that the regenerated nerve fibres always join on to the same muscle fibres as their predecessors.—Mr. HENRY CLARK thought that the essential point in the investigation of the homology of any muscles was to ascertain if the supplying nerves themselves strictly corresponded in their central origin; in other words, the question resolved itself into one of the true homology of the nerves. In the investigation of the homology of the muscles of the foot and hand we regarded the external plantar as corresponding with the ulnar and the internal plantar with the median, but it was plain that the cutaneous distribution of the femoral did not correspond with that of the ulnar; in fact, the nerves were not strictly homologous. In this, it seemed to him, lay the apparent discrepancies in the supply of muscles which in all respects except nerve supply appeared to be true homologues. He accepted the view to which Dr. Cunningham seemed to be inclined, and which Dr. St. John Brooks insisted on, that the possible shunting of nerve fibres must always be kept in view.

A Stage in the Growth of the Primate Brain.—The PRESIDENT (Professor D. J. Cunningham) read a paper dealing with the following points: 1. Towards the end of the second month of development the thin wall of the human cerebral hemisphere became deeply infolded in particular localities. 2. In all probability these infoldings were particular to the primate brain. 3. They occurred prior to the mapping out of an occipital lobe, and during the time that the cerebral hemisphere presented an outline similar to that of a quadrupedal hemisphere. 4. They were obliterated (with the exception of two, or it might be three, which were retained as permanent fissures) when the occipital lobe became evident, and where the characteristic form of the primate cerebrum was attained. 5. They were in all probability the result of a want of harmony between the growth of the cerebrum and that of the cranium. How could these facts, he asked, be explained? Although in all probability cranial and cerebral growth went on, as a general rule, smoothly and evenly, and in perfect harmony with each other, it must be assumed that all steps towards an advance in development must be initiated within the brain, and that the cranium would, for a time at least, resist these. This being granted, we could readily understand that the growth tendency towards the formation of an occipital lobe was more firmly impressed upon the cerebrum than upon the cranium. When the primate head reached the quadrupedal stage the cerebrum went on without any intermission in its growth towards the higher development and the formation of an occipital lobe. The cranium paused, however, in its growth. This quadrupedal pause brought the cranial and cerebral growth into antagonism with other. It marked a stage in the evolution of the primate head, but it was only temporary, although of sufficient duration to bring about the transitory infoldings of the cerebral wall to which he referred.

On the Cause of the Twisting of the Umbilical Cord, illustrated by a Mechanical Model.—Professor F. J. ALLEN read this paper. He considered it improbable that the twisting could be due, as was usually supposed, to muscular movements of the foetus. It seemed unlikely that the muscular movements should be entirely or even mostly in one direction, and, therefore, some more satisfactory explanation must be sought. He attributed the twisting to the excessive growth of the umbilical arteries, whereby they were obliged to take a tortuous course; and when a slight obliquity had once been established, every pulsation would tend to increase the spiral, and every movement of the foetus or the mother would be taken advantage of, the cord and the foetus revolving together until, with the growth of the foetus, the friction of the amnion put an end to the rotation. The model shown consisted of two caoutchouc tubes fixed on a very mobile supporting frame, and showed that whenever the frame was rendered shorter than the

tubes by the contraction of an elastic cord, then the tubes immediately assumed a spiral arrangement like that of the umbilical arteries in the cord. The author could not find that any advantage accrued to either mother or foetus through the twisting of the cord. It increased the resistance to circulation, and also increased rather than diminished the danger of stoppage of the circulation by accidental pressure. The twisting was absent in most, if not all, multiparous animals.

THE TOPOGRAPHICAL ANATOMY OF THE MASTOID REGION OF THE SKULL; WITH SPECIAL REFERENCE TO OPERATION IN THIS REGION.

Read in the Section of Anatomy and Physiology at the Annual Meeting at Birmingham, July, 1890.

By A. E. BIRMINGHAM, M.B.,

Professor of Anatomy in the Catholic University, Dublin.

THIS paper contains the results of an examination of one hundred specimens—recent and dry—undertaken with the object of making clear certain anatomical relations of the mastoid region, which are of importance in surgical operations performed in this region.

The following are some of the chief points upon which information was sought:

1. The position of the lateral sinus, with its variations; in every specimen the position of the sinus was distinctly mapped out on the exterior of the skull by the following method: holes were made with a fine drill from the inside through the skull, along the course of the sinus; by the aid of these holes the sinus was distinctly mapped on the surface. 2. The level of the upper surface of the petrous portion of temporal, that is, the level of the floor of the cranial cavity in the vicinity of the meatus; this was also marked out on the surface of each specimen by drilling as in the case of the sinus. 3. It was sought to find if there were any fixed spot, on the surface, between the meatus in front, the level of the cranial cavity above, and the line of the lateral sinus behind, which corresponded exactly to the position of the antrum mastoideum, and at which a drill might be sent in with safety in every case to drain the antrum and mastoid cells. 4. The anatomy of Mr. Barker's operations for temporo-sphenoidal and cerebellar abscess was examined, and that of an operation proposed and practised by Mr. Wheeler, of Dublin, by which he opens the cranial cavity and antrum with one trephine hole, thus allowing the antrum to be drained and the brain explored at the same time. Besides several minor matters were examined and reported upon.

Some of the results may be briefly mentioned:

1. The usual accounts of the lateral sinus which describe it as running horizontally outwards and forwards from the occipital protuberance to a point one inch behind the meatus, where it is said to turn down behind the posterior margin of the mastoid process, is shown to be inaccurate; as is the statement, found in most books on the subject, that the transverse fissure (which, of course, correspond to the line of the lateral sinus) is marked on the surface by the portion of Reid's base line behind the meatus. The sinus does not run horizontally forwards from the occipital protuberance; on the contrary, it is distinctly arched; from the region of the protuberance it ascends gradually or rapidly above the base line until it reaches a point about one inch and a half behind and nearly three-quarters of an inch above the centre of the bony meatus; here it bends gently or sharply, and runs down in front of the posterior margin of the mastoid process, about half an inch behind the meatus; it turns in to the jugular foramen at a point about one quarter of an inch below the level of the floor of the meatus. Its relation and position vary to a marked degree; these variations are pointed out, and methods given for avoiding the sinus in all cases. 2. It is shown that the floor of the cranium is usually nearly four-sixteenths of an inch above the roof of the meatus, but here, too, there is considerable variation, the distance sometimes is only one-sixteenth of an inch. 3. Regarding the position of the antrum, this cavity may be always drained by sending a quarter-inch drill straight in, placing the drill at such a point that the margin of the hole which it makes shall lie as near as possible to the posterior margin of the meatus, and immediately beneath—or just up to—a line drawn horizontally backwards through the extreme upper border of the meatus.

In a very few cases the drill enters, not the antrum itself, but some of the cells opening directly into it, which will be just as effective as opening the antrum direct. In almost every case the drill used may be one-third of an inch in diameter; but, if a larger instrument be used, there will be danger, in a considerable number of cases, of opening into either the lateral sinus or cranial cavity. 4. It was found that in about 15 per cent. of cases, if a three-fourth inch trephine were applied at the point indicated by Mr. Barker for trephining in temporo-sphenoidal abscess, the lateral sinus would either be exposed in the opening or would run along its margin. It is suggested that a point half an inch higher should be selected. The site selected for trephining in cerebellar disease is safe as regards the lateral sinus; but occasionally the trunk of the occipital artery would be injured where it lies in the groove on the temporal, besides the bone at this point is thickly covered. A point two inches behind the centre of the meatus and one inch below the base line would give a site more superficial, and safe from sinus and artery. Mr. Wheeler's operation, if certain precautions be taken, will in the majority of cases afford a means of draining the mastoid cells and exploring the brain; but sometimes the antrum cannot be reached through the opening, owing to the low level of the upper surface of the petrosa. Amongst the minor details, a case of solid mastoid with entire absence of antrum is recorded; the varying distance of the lateral sinus from the back of the meatus and from the surface of the skull behind the ear is given. It is pointed out that occasionally the sinus is only one-twelfth of an inch from the surface, and the danger of incautious perforating at this part is dwelt upon. A point is given at which the sinus may always be reached by trephining. The position of parts represented on the upper surface of the petrosa is described, some inaccuracies frequently found in descriptions of this part are pointed out, and some observations upon the relations of the base line and upon the anatomy of the antrum itself are recorded.

AN ADDRESS ON SOME POINTS BEARING ON LUNACY PRACTICE.

*Delivered at the Annual Meeting of the South Midland Branch
of the British Medical Association.*

By DAVID BOWER, M.D.,
President of the Branch. Physician to the Springfield House
Private Asylum Bedford.

THE point most prominent at present in connection with lunacy practice is the proposal to facilitate the treatment of insanity by providing small hospitals for recent cases with a resident medical officer, and a visiting staff as at our general infirmaries. This experiment has been pressed upon the London County Council by a member of our profession, and his suggestion as to who should form the visiting staff seems to be based on the principle that those are most competent to treat mental diseases who have seen least of them, and that practitioners in lunacy have been standing still, whilst other practitioners have joined in the universal march of progress characteristic of the century. I take leave to deny this proposition, nor do I think it proved because we trust mainly to placing our patients in the best environment for availing themselves of the healing power of Nature, and have not yet discovered any drug which is a specific in general paralysis or dementia, as you have found none for cancer or consumption.

Another argument is that patients sent into our vast lunatic asylums are apt to be lost sight of as drops are in the ocean, and there is some ground to stand on here. The proper remedy, however, for this state of affairs is to be found, not in the establishment of new and separate petty hospitals, but in the fuller development of hospitals wards, either in or near the large asylums where all recent and acute cases could be kept together, and have the required special and individual attention from the superintending physicians. From these they could be drafted to the ward most suited to their needs if they did not recover in two or three months, or if they could no longer benefit by the special care of such a hospital ward. Old cases assuming new phases, or otherwise requiring special attention, could also be sent to the

hospital ward at any time. This plan is in operation in many asylums, and ought to be adopted by all. Were this want universally supplied it would soon show the presence of a further want in the matter of a large augmentation in the medical staff, and a wide extension of the system of employing in each asylum two or three unpaid post-graduate clinical clerks, and would thus utilise an immense field for study, at present very little available for use.

Another point in lunacy practice I have long wished to say something about is the want of more combined work between the asylum practitioner and his brethren in general practice. I am quite sure we in asylums and our patients would benefit greatly were outside medical men to visit the asylums to see with us cases in consultation. Their wider and larger experience in the diagnosis and treatment of bodily ailments, and, when seeing their own patients, their better knowledge of the family and personal history of such patients could not fail to be of great assistance to us in the conduct of our cases. On the other hand, I think the early treatment of mental diseases would be greatly promoted and the numbers requiring to be committed to asylum care largely diminished, at least in the case of non-paupers, if the asylum practitioner were called in in consultation at once, instead of, as is too often the case, waiting till the malady has developed so far that only asylum care is possible. Here I know that the patient's friends want much more educating than their medical man, and that a great obstacle requires to be removed, namely, the "restriction" in most cases, and "the prohibition" placed on consultation practice by the committees of pauper asylums and lunatic hospitals. The special knowledge of asylum physicians should not be for the exclusive benefit of lunatics inside asylums, and denied, as it is now, to those outside; it should be a very easy matter so to arrange that the consultation practice need not be carried on to the detriment of the patients in the asylum. Many properly selected cases of mental disease might be quite as well treated at home as in an asylum if the means of the patient permit; the patient would only require to be seen by the asylum physician once or twice a week in consultation with the family doctor, and would not then be left entirely in the hands of private attendants, who too frequently manage not only the patient but the doctor as well. Private attendants have unfortunately a tendency to retrogression, and although most excellent attendants when they are in the asylum under special medical control, soon get into evil and pernicious habits in their conduct of cases when not so controlled.

The only other point I will trouble you with is the matter of the certification of the insane, and unfortunately here we have to attend to legal rather than medical forms, and we are not now the final judges of proper treatment for our own patients; we must satisfy a magistrate that there are sufficient grounds for placing a patient under asylum treatment—"incarceration," as the lawyers are pleased to term it. The Association did all it could to assert the rights of medical men while the Bills were before Parliament, but now the time for criticism and amendment is past, and we must make the best of the procedure as we have it.

Some of you may have seen a correspondence and leader in the BRITISH MEDICAL JOURNAL on the working of the new Act, and I would again point out that it is very advisable, in the interest of the patient, that early treatment should not be delayed until a justice should be searched for who will know his duties under the statute; but that (as is the almost universal practice in Scotland) one of the medical men certifying should sign the urgency certificate in addition to his ordinary certificate; and this I think he may very fairly do, stating as his ground, that the patient (if not dangerous to himself or others) is not under proper care, and is requiring immediate asylum treatment. This would allow the patient to be sent to an asylum at once, and would throw all the trouble of getting the justice's order upon the asylum authorities, who, with their constant experience, would find it a much easier task than would the general practitioner who has to deal with only a few cases of lunacy in a year. Of course, it may be said, that it is the province of the relatives to take these steps, but we know quite well that in the majority of cases the whole burden of arrangement is thrown upon the shoulders of the medical man, and he cannot often shirk it.

May I, at the risk of appearing to lecture, point out that infinite trouble might be saved if certifying medical men would carefully read the side notes on certificates as they write, and so make quite sure that they are filling up the spaces properly? You will scarcely believe it when I tell you (but it is absolutely true)