bition of Obstetric Instruments in 1866. The amount of ingenuity which must have been expended in contriving almost endless modifications of so simple a form was certainly something marvellous. And there is, perhaps, no one feature which so favourably distinguishes the midwifery of the present day, as the almost universal consent with which the great importance of this instrument has been recognised and acted upon. In this respect there has been a remarkable reaction, from the over-cautious practice which prevailed towards the end of the last century, and which was due, in a great measure, to the influence and example of the illustrious Denman. He had no doubt been a frequent witness of evils resulting from the abuse of this instrument, in the hands of ignorant and incompetent practitioners, at a time when there were no examinations in midwifery, and when the science of obstetrics was despised by the medical colleges. Accordingly, accoucheurs were taught by his example and precept to place implicit confidence in the powers of nature, and never to resort to instruments, unless they had the most plain and palpable evidence that she was unequal to her task. These doctrines of non-interference were, however, pushed to their extreme point by Denman, and may be said to have culminated in that rule so fraught with danger; viz., that the head of the child should have rested for six hours as low as the perineum (*i.e.*, in a situation which would allow of their application), before the forceps are applied, although the pains should have altogether ceased during that time. "In this particular, no doubt, his prudence was so excessive that it became a great fault; but, in other respects, his doctrine had a most salutary effect in their time, and served to inculcate the wholesome maxim, 'Meddlesome midwifery is bad'; which has now become one of the canons of obstetric practice. General rules of this kind, however, must bear some relation to the average capacity of the practitioners who have to carry them out; and, in the present day, when medical men are so much better instructed, especially in midwifery, it is but reasonable to allow a greater latitude of interpretation. This has practically been the case; and, in the present day, we find that the forceps is resorted to much more frequently in difficult labour; and, as experience proves, with the best possible results. In support of what I am saying, I may refer to a paper "On the more Frequent Use of the Forceps," by Mr. Philip Harper, which appeared in 1860, in the first volume of the *Obstetrical Transactions*. In this paper, Mr. Harper points out, from three tables of statistics of the Dublin Lying-in Hospital, drawn up severally by Dr. Collins, Drs. Hardy and McClintock, and Drs. Johnston and Sinclair, that the maternal deaths steadily decrease as the forceps is more frequently and earlier used. Under Dr. Collins, the forceps was used very sparingly; whilst under Drs. Johnson and Sinclair it was used very freely; and, as the event proved, with the best results, both to mother and child. Mr. Harper's own statistics are still more favourable, although, in a total of 6053 cases, the forceps was used 232 times, or as often as once in twenty-six cases. According to Sir James Simpson (*Obstetrical Works*, vol. i, p. 855), the forceps has been used much more frequently than this by some of the German accoucheurs; for instance, as often as once in fourteen cases by Carus of Dresden; once in twelve by Busch of Berlin; and once in seven by Siebold of Berlin. Although I do not think myself that so frequent a use of the forceps is desirable, yet I consider that it is abundantly proved that the maternal mortality is less after the use of the forceps than after unassisted tedious labour. With regard to my own practice, I may say that I now make it a general rule to apply the forceps when the head has remained immovable in the pelvic cavity for more than two hours; and this, quite irrespectively of the condition of the mother. At the same time, I am quite of the opinion of Dr. Collins, that, "so long as the head advances ever so slowly, the patient's pulse continues good, the abdomen free from pain on pressure, and no obstruction to the removal of the urine, interference should not be attempted, unless the child be dead."

As, in all the statements which I bring forward respecting the use of obstetric instruments, I wish, as much as possible, to draw upon my own experience, I will now quote some statistics from my own practice to show what are the causes which render the use of the forceps necessary, or, at all events, advisable. Since I have been engaged in midwifery practice, I have used the forceps ninety times; and I find that, out of the ninety cases recorded by me, sixty-nine, or more than three-fourths, were primipare. This result is what would naturally be expected; for, in most forceps cases, there is both increased resistance and diminished uterine power; and the former element is especially present in first labours, where rigidity of the soft parts is superadded to other causes of resistance; and, above all others, it is present in women who have passed the period of youth. Amongst the sixty-nine primipare, there are ten women whose respective ages range from thirty-eight to forty-three.

I shall next arrange the causes in the order of their respective frequency.

1. By far the most frequent cause is a want of power, and slight

want of room in the pelvis. Of this, there were forty-one cases out of the ninety.

2. Want of power only. Of this, there were twenty-two out of ninety.

3. Want of room only. Of this, there were twenty-one.

4. Convulsions. Of this, there were four cases.

5. Prolapse of cord. Of this, there were only two instances.

The results of the ninety forceps cases I have recorded show that, as Mr. Harper insists, the operation is not necessarily a dangerous one; although I have used the forceps more frequently than would be sanctioned by the old established rules of midwifery. There were four maternal deaths in all; a proportion which is rather less than that usually met with in British practice, according to Dr. Churchill's tables. These gave one death in 20½ cases, as the average mortality attending the use of the forceps in Great Britain. In the four fatal cases which I mentioned, the deaths were due in two to puerperal fever; in a third, to bronchitis; and, in a fourth, to malignant scarlatina. In these last two the deaths were in no way traceable to the use of the forceps—a circumstance which, if taken into consideration, would make the results appear still more favourable. With respect to the infant mortality in my ninety cases, I find that fifteen children were still-born, and seventy-five born alive—so that one child in six was lost instead of one in four, which is stated by Dr. Churchill to be the average mortality of children delivered by the forceps.

With respect to the instrument employed in these cases, I may mention that in by far the greater number it was the short forceps recommended by Sir J. Simpson. This instrument has not a great compressing power, and it has a long shank between the fenestra and lock. In consequence of this peculiarity, it can be used when the head is quite high in the pelvic cavity, and yet the lock will be clear of the perineum. The handles also are very short, so that the whole instrument is not unduly lengthened by the elongation of the shank. Some loss of lever power is thereby occasioned, but this is not a matter of much consequence in using the short forceps, and it is very undesirable that the handles should be unduly long, because, if they are, they are very much in the way, and, especially if she be restless or convulsed. The long forceps which I generally use has handles of the ordinary shape, and blades with a lateral curve, and very similar to those of Sir J. Simpson's long forceps, and are always coming in contact with the bed or the limbs of the patient.

The next subject for our attention will be the best mode of applying the forceps; but as this will occupy much time, I must defer it until some future occasion.

ON CARCINOMA OF THE LIVER.*

By JOHN RICHARD WARDELL, M.D., F.R.C.P.,

Physician to the Tunbridge Wells Infirmary.

NOT long ago, another illustration of the manner in which hepatic malignancy may be resembled came under my notice; and I may here not inaptly cite a few facts from the copious notes of this case, which now lie before me. In the latter part of September last, I was requested to visit a married lady of nervo-biliary temperament, 50 years of age, who had lost flesh, and who had become pale and anæmic. She had not long before sustained a bereavement which had given a shock to her constitution, and thrown her into ill-health. She had on previous occasions been under my care for attacks of cardiac asthma, which came on after any unusual cause of excitement. She complained of epigastric pains which darted into the right hypochondrium, of nausea, loss of appetite, and general *malaise*. The liver descended below the false ribs, and it could be traced above the fifth interspace. The epigastrium was full and round. The thorax presented rachitic antero-posterior flattening. At the date now spoken of there was no pulmonary distress, nor any auscultatory signs of phthisis. The tongue was flabby, but clean; the alvine and renal excretions were dark. The urine was very acid, and contained bile-pigment. She had lost some blood by hæmorrhoids, and there was a waxy, yellowish, cachectic look in her features. The epigastric pain, hypochondriac aching, flatulence, and nausea with occasional sour vomitings, were cardinal and continued symptoms. The varied treatment to which she was subjected gave not more than temporary benefit. In the latter part of November, there was some dulness in the upper third of both lungs, which was accompanied with slight bronchophonic resonance, and some patches of moist crepitation. The cough was very trifling, and the sputa only consisted of occasional expectorations of glairy mucus, with some purulent streaks. The nausea, sour eructations, flatulence, occasional vomiting, epigastric pain, and

* Concluded from page 465 of last number.

hypochondriac weight, were symptoms which remedies did not more than briefly alleviate. In the course of time the legs became oedematous, and the loss of flesh and strength were more marked. A large portion of the lung-tissue remained pervious to air. The cough and expectoration did not increase; there were no notable perspirations, and no colliquative diarrhoea. It was evident she was not altogether sinking from phthisis. She died on January 20th. Prior to her death, I was interrogated as to the nature of her malady, and was asked, and not without some show of reason, if there were internal cancer? I felt it difficult to answer the last part of the question, but had no hesitation in replying that the liver was organically diseased and very large, and that there was tubercle in the upper part of both lungs. I had given much thought to this case, but there were some conflicting and contradictory circumstances which rendered the ailment ambiguous. The dyspepsia, the gastric pain, the *persistent nausea*, the *sour eructations*, the wasting, the cachexia, in no slight degree resembled malignancy. The phthisical symptoms came on in secondary manner. Was it carcinoma of the stomach, with encephaloma of the liver? But at the free hepatic edge were no nodules, and the right lobe was smooth. Though phthisis and cancer do not often simultaneously occur, yet we know such is sometimes the fact. Mr. Sibley gives fifteen cases of the coexistence of tubercle and cancer. (*Medico-Chirurgical Transactions*, vol. xlii, p. 147). I pressed for an examination, and Mr. Manser kindly made the dissection. We found the upper third of both lungs to contain large amounts of grey and yellowish tubercular deposit, some of which was breaking up. The liver was extremely large, pale, and fatty; of the nutmeg variety. The *stomach was thrust out of its place*; it lay perpendicularly in the left hypochondrium, and its pylorus was quite over to the left of the mesial line. Its tube being twisted over into that situation, and pressed upon by the large liver, doubtless explained the gastric symptoms. The organ had been mechanically irritated. In the former of these last two examples there was carcinoma, and the most characteristic of the common symptoms were wanting; in the last named, the symptoms of cancer were simulated by other organic changes, and a peculiar and accidental occurrence. In both cases, dissection gave evidence of great practical significance.

In recurring to the first given illustration in this paper, it should be held in mind, that there are other morbid conditions which exemplify considerable similitude to this affection. In pyæmic abscess, nodulated eminences can sometimes be felt at the lower margin; but in pyæmia the symptoms are altogether more acute, the circulation is increased, and pain, cough, and heat of skin are also generally present, and these are indications of the peritoneum being more or less involved. Jaundice may be the accompaniment from blood-lesion, or from a purulent abscess pressing upon the ducts. Dr. Murchison says that in pyæmia the superficial veins are not large as in malignant disease; nor is ascites an usual event. Spectra, rigors, perspirations, dry tongue, and the shorter continuance of the symptoms, will aid us in arriving at a correct decision. Again, the pyæmia may have been of traumatic origin, or its primary cause may be sufficiently obvious. In tropical abscess bulging and fluctuation, rigors, hectic, and the patient's history, will point to the right conclusion. In echinococci there is far less constitutional disturbance; the tumours are smooth, round, bossy, and often fluctuating; there may be little or even no pain, and their growth is much slower than cancer. In amyloid liver, the surface is, on palpation, even; and often albuminuria, splenic enlargement, and caries are the accompaniments. In cirrhosis, the nodules are small, the tenderness inconsiderable, and ascites and anasarca generally come on, not infrequently in marked manner. Cancer of the omentum sometimes, as I have seen, fills up the abdominal cavity to such an extent, and there is such a soldering to adjacent viscera, as to render the diagnosis of hepatic disease quite impossible. Dislocation of the liver by empyema can be determined by the physical signs of the right thorax; and the objective and physical symptoms of encysted kidney are generally sufficient to clear up the question. In hepatic malignancy the indented dimpled feel of the tumours is a very trustworthy indication. In the instance now referred to, as I have above observed, the nodules were not felt when he first came under my care. Frerichs says, that, in the earlier stage of the disease, the nodulated projections are wanting. Sometimes the liver in this malady does not project below the costal arch, and no tumour can be felt. Then pain, by percussion over the thoracic wall, will be our best guide if associated with cachexia, wasting, and the other symptoms of malignancy.

Budd says, that cancer in primary or secondary form is more frequent in the liver than in any other organ; the Parisian pathologists place it as fourth on the list; and Rokitsansky gives its numerical relation, when compared with other organs, as one in five. The first named authority asserts that, of twenty-nine cases given by Cruveilhier, Andral, and Farre, in only three was it confined to the liver. It occurs most com-

monly between the ages of thirty and fifty; and the encephaloid variety is most usually discovered. Budd, Walsh, and Simon say, that colloid cancer is not seen in the liver; but this endogenous cell-formation has been noticed in the viscus by Rokitsansky, Frerichs, and Wilks. It is most rare. That cancer should so often find its *habitat* in this viscus appears explicable, because this organ naturally receives a large quantity of blood, and its capillary circulation is slow and consequently favourable to the genesis of original cells from the plasma, or to the development of transferred germs, and because the portal blood must thither carry such germs (as pus-globules are carried) when the disease exists in the stomach or in any part of the intestinal canal; and again, the contiguity of the mamma, which is prone to the affection, is another cause tending to the same result.

The nodulated form—the tubera circumscripta of Farre, which was first correctly described by that author—in its earlier stage cannot be distinguished from encephaloma. These tubera, as in the first case given, are often only felt after the disease has for some time been established; they vary greatly in size, and Cruveilhier maintains that their magnitude is in an inverse ratio as compared with their number. They are sometimes as large as an orange or a small cocoa-nut, and even when of such volume may be homogeneous and condensed; but their internal consistency is much modified by their age, and ultimately, in most cases, central softening ensues. They are not always invested with a proper capsule, but, whether they possess a circumferential covering or not, the immediately surrounding parenchyma undergoes ultimate structural changes; the colour may be of a greenish tinge, from pressure on the small ducts, or there may be a pallor from vascular obliteration, and an excess of fat-molecules, those frequent associates of malignancy, and the evidences of a degenerate and debased metamorphosis—indeed, both Virchow and Vogel believe the rudimentary cancerous substance to be not only of cellular formation, but also a modified protein or fat. The flattening and indentation of these tumours are partly from the moulding influence of the resistive thoracic wall, and partly from central disintegration. This loss of consistency in the middle of the growths is analogically observed in tubercular deposit; and, notwithstanding that the one may be regarded as a veritable growth, and the other as a malassimilative formation, there is, in this respect, a good deal of pathological agreement. In both, there eventuate marked molecular changes. In acroplastic tubercle, absorption renders the substance more dense and fibroid; in the aplastic product there is loss of cohesion, or vital affinity so called; and these mutations begin, first, most remotely from the surface, or, in other words, where healthy plasma first ceases to be conveyed. In cancer, the disintegrative softening commences at the part most distant from the reach of nutrient vessels. The cornea breaks up in like manner, under perverted metamorphosis, and when deprived of vitalising plasma. The pressure and irritation which these nodulated bodies produce in the hepatic and parietal peritoneum are not such as to give rise to flagrant peritonitis; the peritonitic inflammation has not the usual tendency to become diffuse, and it is very generally partial and circumscribed; and the causes of such circumscription are doubtless the slow growth of the tumours, the asthenic condition of the system, and the natural tendency which there is in this membrane, when gradually stretched or pressed upon, to assume the adhesive form, which form is a conservative law in the economy and protective from worse results. The peritoneum becomes thick and opaque, and its union with some opposing surface is apt to occur. The amount of serum is thus inconsiderable, because, when the viscus becomes organically affected under the general cachectic and malassimilative conditions, there is some correlation between the diminished volume of blood and the vascular impediment in the organs, and because the larger portal branches may to no great extent be encroached upon, unlike as in cirrhosis, when there is atrophy of the venous capillaries, the entire venous circulation is interfered with, and serous effusion is the notable and pathologic sequence. In the account given of the inspection made in the first related case, it was stated that the gastro-hepatic omentum was studded with innumerable small, hard bodies, which were evidently canceroid; and it is quite clear, from our knowledge of the ultimate pathology of this disease, that these bodies owed their origin to the larger tumours in the liver. Cancerous germs can be transferred from one part to another in various ways: by the lymphatics; by venous radicles; by being carried along mucous membranes, as evinced by the growth appearing on the bronchi in cancer of the lung-substance; in the ureters and bladder, when first formed in the kidney; and in the rectum as consecutive of its occurrence in the bowels. They can also be transferred by the inoculative process, and too by the contact of unbroken and continuous surfaces. In the contact of a cancerous part with an adjacent and healthy structure, blastema, carrying the elementary qualities of the cancerous material, may be infiltrated into an organ or tissue, and fructify into malignant

products. And we know it to be the peculiar property of cancer to conform itself to the natural character of the structures in which it germinates. The omentum being more fibrous than the hepatic parenchyma, the heterology of these bodies acquired a modification; they inclined more to scirrhus than the hepatic tubera. They did not exemplify that reckless tendency to augmentation of volume which marks the progress of encephaloma; and in proportion as the blastema has the fibroid proclivity, relatively will the growth be tardy. When these tumours are largely or numerous formed in the abdominal organs, death is, in a great measure, produced by pressure upon the chylopoietic and assistant chylopoietic viscera.

THE PIECEMEAL EXCISION OF NÆVI.

By FURNEAUX JORDAN, F.R.C.S.,

Surgeon to the Queen's Hospital, and Professor of Surgery in Queen's College, Birmingham.

THE operation which I have devised for the removal of nævi, and which I first performed in 1863, I have hitherto so imperfectly described, that I have determined to bring it before the profession with more completeness, though still with all possible brevity. I am the more induced to do this, because I am frequently interrogated touching the details of the method, and because of its increasing adoption in hospital and private practice.

The operation is performed as follows. An incision is made through the superjacent skin and through the nævus, so as to completely divide it into two halves. Hæmorrhage is prevented by pressure on the adjacent arterial trunks. In the face, for instance, where the operation is most useful, pressure on the facial or temporal or supraorbital, one or two or all, arrests the bleeding. If pressure on the main trunks do not perfectly arrest all hæmorrhage, one or two points of pressure (with a director) near or even within the incision will. I have often been surprised to find that one or two points of pressure alone sufficed to secure a bloodless condition of a nævoid section. The next step is with clawed forceps and scissors (curved on the flat) to remove each half

piecemeal, beginning at the centre, as in the diagram, and proceeding to the periphery. There is not the least difficulty in distinguishing the nævoid (capillary, venous, or arterial) from the healthy tissue. The removal of one half should be completed before that of the other is begun. When the nævus is completely removed, there is no hæmorrhage on relaxing the pressure. As a rule, it is quite unnecessary to remove any skin; even if involved, it recovers after the excision of the subjacent nævus. If very much implicated, an elliptical portion of skin may be taken away, so that the edges of the wound can be so brought together as still to leave only a line of cicatrix. Whether any skin be removed or not, the edges of the wound should be brought together with silver wire, and moderate pressure effected by means of a pad of dry lint and a bandage.

I believe piecemeal excision to be the best operation in all cases where it is desirable to save the skin; and these are the great majority of cases. Where it is not desirable to save the skin, as in very pedunculated nævi, or where the skin is extremely implicated over the whole

tumour, the *écraseur*, or the ligature, or bodily excision, may be preferable. In using the *écraseur* or the ligature, I find that the circular incision to receive the chain or ligature is most easily and evenly and rapidly made with sharp-pointed scissors, one point being first thrust through the skin.

Piecemeal excision from the centre is applicable in the larger number of cases, and especially in the face and eyelids. It is immediate, complete, safe, and leaves only a linear cicatrix. It removes the nævus, all the nævus, and nothing but the nævus.

PROFESSOR HUXLEY'S HUNTERIAN LECTURES ON THE ANATOMY OF THE VERTEBRATA.

Delivered at the Royal College of Surgeons of England.

LECTURE XIV.

THE Brain of Osseous Fishes has given rise to very much discussion, and various interpretations of its homological relations have been suggested. Nevertheless, the true nature of its parts is to be made out prettily readily, as the Professor proceeded to demonstrate, selecting, as his type, the brain of the Cod. Here we have what is on all hands admitted to be the medulla oblongata surmounted at its anterior end by a backwardly projecting azygos structure, in front of which are two rounded bodies a little separated by a slight median longitudinal groove. In front of these, again, are two solid globular parts whence two long crura proceed, each crus having a swollen distal end. These swollen ends of these crura are the olfactory lobes, and the solid globular parts from which they proceed are the cerebral hemispheres. This homology is proved by the fact that the pineal gland is rooted immediately behind them, while the pituitary body (which always indicates the third ventricle) springs from beneath them towards their hinder margin, and indicates the under part of the hinder portion of the fore brain. The cerebral hemispheres are united together by a transverse band of fibres, which constitute the "anterior commissure." The imperfectly separated bodies immediately behind have been supposed to be the cerebral hemispheres; because, on separating them, parts were found which were supposed to represent the corpus callosum and the fornix. It would, however, have been startling indeed to find such mammalian structures, considering that all the other oviparous forms are utterly destitute of a corpus callosum, and, indeed, such interpretations are quite erroneous. The parts in question represent the optic lobes—or midbrain, and the transverse commissural fibres, which connect them together anteriorly, answer to the posterior commissure of higher animals. Beneath the optic lobes, on the base of the brain, are two prominences termed *lobi inferiores*. The median azygos part behind the optic lobes is the cerebellum.

Reptiles present us with two types of brain; one in which the cerebral hemispheres are small, as is the case in Lizards, Chelonians, and Snakes; the other, in which the same parts are large, as is the case in the Crocodilia.

In Birds, the olfactory lobes are small, the cavity of each cerebral hemisphere is occupied by a great corpus striatum. There is no trace of a corpus callosum, but there is a rudiment of a fornix. The optic lobes, in birds, are very exceptional in position, being singularly lateral and depressed.

In ascending from Birds to Mammals we pass over a gulf, for in the former the anterior commissure is always small, while mammals, with very imperfect brains, have it largely developed. This, perhaps, may depend on the sense of smell.

The lowest form of mammalian brain is, strange to say, not to be found in the lowest mammals (*e.g.*, in the Ecidna), but in such animals as the hedgehog and the armadillo.

The Professor here illustrated by a chalk diagram the principal changes as to form and proportions which would be necessary in order to transform the brain of an armadillo into that of a man. The prodigious expansion of the cerebral hemispheres was shown to change the position of the so-called olfactory nerves from the anterior end, to the under surface of the cerebrum, while the expansion and bending downwards of the posterior end of the cerebrum covers the cerebellum and produces the temporal lobe and Sylvian fissures on each side.

The optic lobes are constantly divided in mammals, into the four parts absurdly named "nates" and "testes." No explanation of this structure has been given, and the existence of the transverse division has been denied in the echidna, but its presence has been demonstrated by Mr. W. H. Flower.

The corpora mammillaria are placed a little behind the pituitary body