the course of many years' practice, and that was the case I have mentioned to you, in which the deceptive mildness of the symptoms was the cause of a fatal hesitation.

ON
ISOLATED OSSIFICATION,
AS CONSISTENT WITH THE VIEW THAT BONE ONLY
PRODUCES BONE.
By T. WILKINSON KING.

In an account of the mode in which fracture is repaired, I have objected to the opinion that isolated commencements of ossification are commonly concerned in the reunion, and my objection has been complained of by some critics, though more in reference to words than philosophy. My chief reason, however, for throwing together the following observations, is the wish to confirm and extend as well as facilitate the conclusions I have formerly advanced.

Speaking of independent ossification, I stated*—"Every museum contains the alleged proofs of these facts; but I may safely ask—where is the collection in which we may find a series of specimens to establish the spontaneous and independent commencement of bony callus—the successive stages of irregular or accidental callus? The formation of all bones, by initiative points of ossification, follows peculiar laws, and it is not impossible that the same laws are to be seen in operation in other instances, but the ordinary rule of repairing fracture is parallel to the growth, and not to the commencement of bone; it is *bone upon bone* wherever increased nutrition or inflammation is excited."

The reviewer in the "Medico-Chirurgical Review" has objected to this, and I may admit that the challenge was not offered without a conviction that it was unanswerable, nor without some confidence that there remained more to be said on my own side of the question.

It is my intention to advert to a variety of little facts in physiology and pathology which explain the occasional appearance of new and detached points of ossification, and the first that I offer is in a manner a pattern of the whole. Cheselden has depicted on the authority of Nicol, an ingenious physician of his own time, the margin of a fetal os frontis in which the bony radiations are bounded by numerous little isolated ossifications. Now the question is, whether these rough points arose in the energy of growth from original centres, or whether the modelling process of absorption, everywhere in progress at this time, may not have divided the radii, and have left these points to proceed for awhile as independent bones.

I admit that the reply must be doubtful, but I shall assume for the present that the latter explanation is the correct one. The appearance described is probably rare. The existence of ossa triquetra, or wormian bones, is probably explained by Dr. Nicol's fact. These supernumeraries are sometimes excessive in the expanded skulls of old and settled hydrocephalus. In severer forms of hydrocephalus we find a curious process causing the isolation of bony spots; for the unequal form of the skull renders certain parts of it

most of all subject to the internal pressure, and these may lose all traces of bone, and may be found entirely membranous. Absorption may thus divide the calvarium into countless misshapen parts, and still it is apparent that ossification is either not arrested, or that it is renewed at intervals to a very considerable extent. It is still more a support to my first assumption, that in young examples of hydrocephalus the radiating margins of the flat bones are to be found peculiarly expanded and attenuated, and presenting every variety of little bones between a single divided radiation and massive ossa triquetra.

An ossification in the falx major is, I conclude, of the nature of true bone, and an example of energetic development of bone, as pisiform bones in unusual situations (the back of the hand, &c.), and the ossification of soft union following divided tendon, or that in the stylo-hyoid ligament, &c.

A very prominent mesian spine within the os frontis is sometimes met with, and it is remarkable that all the varieties of bone in the falx are of limited extent, which also distinguishes them from exostosis and active disease. They may even have begun an union with frontal radii.

It is, I think, common enough to find a sudden periostitis, with fluid effusion separating the bone and its covering to a considerable extent, leading to necrosis. Now, all around this severe disorganisation, a more limited degree of inflammation may have deposited a circle of bone (upon bone) beneath the periosteum. But, perhaps, in the centre of the detached periosteum there may be a patch of isolated ossification, the cause of which it may seem difficult to explain; but if, on further examination, the patch be found to correspond to a solitary worm-eaten spot on the surface of the denuded bone, might we not suppose that ulceration had detached a scale of old or new, which, by adhering to the periosteum, continued to form a nidus of ossific deposit. This explanation may safely admit of a farther refinement, for we may readily conceive the abrupt separation of periosteum with incipient ossifications in a similar manner.

Something similar to this last effect may be met with after amputation. A new shell grows rather unequally around the cut end of the bone, and a little tubular necrosis of old bone takes place within. Ulceration separates the dead bone from the living, and, at the same time, perhaps the excessive new ossification begins to waste, and absorption may detach two or three of its knobs from the shaft, although their nutrition is still in part kept up by their own periosteal envelopes.

I have described the lamellar and needle-like radii of some bony fungi in the history of callus before referred to. I am quite aware that these ossifications are not invariably found attached to the original bone, but my opinion is that when they are detached the result is produced by the lateral pressure of soft growth causing absorption and division of the needles, while ossification may still proceed at their summits.

The ivory exostosis of the face, which ultimately sloughs away, I think I have seen beginning by a narrow peduncle of bone which connects it to primary bone, and I see no reason to deny that the knob, being detached, partial concentric layers of bone may be deposited for a time. It is not, perhaps, sur-

prising that a solid, as dense as a tusk, should act as a foreign body.

I have also stated that the independent earthy formation which may occur in fungus in all situations is distinct from bone; perhaps I should say this is generally true, and I would admit that the dried section of a bone, softened and expanded by cancerous growths, with various fragments of original and secondary bone, and of specific ossification, or rather earthy infiltration, may lead to no small difficulty in the mind of even an experienced anatomist, but I cannot doubt that in this, and many other cases, the elucidation is in the main dependant on the reflections I have set down.

36, Bedford-square.

ON THE MEANS OF
DETERMINING THE RELATIVE POSITION
OF THE
THORACIC AND ABDOMINAL VISCERA.

By Mr. SIBSON.

At the late anniversary meeting of the Provincial Medical and Surgical Association held at Leeds, Mr. Sibson stated, that in 1836, when examining patients with chest affections, he felt his knowledge of the relative position of the thoracic and abdominal viscera was imperfect and confused. To remedy this, he took outline sketches of the viscera from most of the bodies that were dissected in the General Hospital, near Nottingham, at first by the eye, afterwards by the aid of a frame. After some time, Dr. Hodgkin, of London, suggested to Mr. Sibson a very valuable plan, facilitating and rendering more accurate the diagrams. This consisted in placing a frame, over which a piece of net or lace was stretched, above the body the organs of which were to be sketched, and by tracing with chalk the outline of each organ as seen through the gauze. Mr. Sibson then proceeded to give a rapid sketch of the general results obtained by the carrying out of this plan.

The apex of each lung ascends above the clavicle from one to two inches. This is an important practical fact, as by examination of this region tubercles may be detected in their early stage, and long before they have extended to that part of the lung below the clavicle. The inner line of the right lung is behind the sternum for its whole length, whereas that of the centre of left lung diverges obliquely outwards and downwards opposite to the fourth costal cartilage. The lower edge of the right lung is generally behind the sixth costal cartilage; that of the left lung is about a rib's breadth lower. The upper margin of the liver, from the dulness of that organ, forms an admirable means for distinguishing the lower border of the resonant right lung. The hollow resonance of the stomach in contrast with the diffused resonance of the lung enables the lower border of the left lung to be defined with equal facility.

In emphysema the chest is constantly in the state of a very deep inspiration; the lower margin of the lung descends several ribs' breadths below its usual seat; at the same time the diaphragm draws down the lungs; it, in a like manner and extent, draws down the heart. The dilatation of the structure of the lungs

is due not to frequent coughing, but to constant efforts, by extreme inflation of the lungs, to relieve dyspnoea, the structure of the lungs being in this manner over-stretched.

In pneumonia, pleuritis, and general tuberculous infiltration of the whole lung, the affected organ is greatly enlarged, the lower margin descends considerably below its normal position, and the walls of the chest on the diseased side are much more expanded than on the healthy one, but the healthy lung expands more than the diseased one on a deep inspiration. In phthisis affecting the summit of the lung, the mass of the lungs does not appear to be much affected in size. In the consolidation and contraction of lung following pleuritis, the whole structure is diminished and the lower margins are raised, their previous position being occupied by the abdominal viscera.

On artificially distending the pericardial sac, it assumes the form of an oblate spheroid, on the top of which is placed a smaller hemisphere, which surrounds the great vessels. In pericarditis with effusion, the sac assumes the same form and displaces the lungs to a considerable extent at the upper part of the sternum; it likewise causes the central tendon of the diaphragm to protrude to a great extent into the abdomen, displacing the liver and stomach. In disease of the heart with enlargement, the lungs are displaced to an extent proportionate to the enlargement, but not at the upper part of the sternum; the liver and stomach, the whole diaphragm, and consequently the basis of both lungs, are considerably lower than in the normal state.

In enlargement of the liver, the free play of the lungs and heart is interfered with if the patient lies on the left side, the weight of the liver falling upon the heart interferes with its action, and causes palpitation. In persons affected with ovarian dropsy or ascites, the abdominal viscera, and consequently the diaphragm, are pushed abnormally upwards, and the lower borders of the lungs and heart are unnaturally high.

The same state obtains, but to a more extreme degree, when the stomach or intestines are over distended as in dyspepsia, this state inducing palpitation; or in peritonitis, where the enormous distension often seriously interferes with the action of the heart and lungs. In empyema and in extensive pleuritic effusion the diaphragm is more lowered and the abdominal viscera are more displaced than in any other disease of the lungs.

TREATMENT OF CROUP.

TO THE EDITORS OF THE PROVINCIAL MEDICAL JOURNAL.

GENTLEMEN,—If you think the following brief remarks worthy of notice, I shall feel obliged by your inserting them in an early number of your valuable Journal. They refer to a mode of treatment in a very formidable disease, croup, which I have not yet seen noticed by others; and although the introduction of a new remedy, generally speaking, requires much care and consideration, I am disposed to imagine that an additional agent of only *possible* utility in so fatal a disease, will claim the attention of the members of our profession.

M. L., a little girl, five years old, previously quite