itself stimulated, ascending tracts carry to the hypo-
thalamus the effects of this excitation of the taste organs, and as a result there are even more potent effects in the digestive and other visceral systems.

It is something more than a mere coincidence that the pituitary body is developed from a combination of buccal and olfactory primordia and that the brain contains two organs which (no doubt by very different means) profound effects in the visceral systems, in some respects analogous to that obtained by the neural bucco-hypothalamic connexions.

Thence of hypothalamicus represents the mechanism whereby the instruments concerned with the phenomena of consciousness can influence the visceral functions of the body, and express those manifold emotional effects which play their part in our reactions to the nervous system are strongly charged with affective tone.

In the first lecture emphasis was laid upon the anatomical facts (a) that the cerebral hemispheres were derived from and built upon what in the primitive vertebrate was simply the receptive instrument for smell impressions; and (b) that the olfactory tracts, unlike all the other sensory paths, lead directly to the cerebral cortex without the intervention of the thalamus. The primitive hemi-
sphere, therefore, must have been the instrument whereby the affective aspect of smell was appreciated—that is, it performed the functions with which the thalamus is concerned for the other senses.

Guided by the sense of smell, the behaviour of the primitive vertebrate is brought under the influence of other “distance receptors,” which successively acquire an affective significance or meaning by being brought into intimate relationship with the dominant sense. Specializations of structure and function then develop by the cul-
tivation of these other senses, often at the expense of the sense of smell, and animals like the teleostean fishes are evolved which are guided mainly by vision. This deter-
mishes a high development of the mid-brain and a retro-
gression of the cerebral hemisphere. Incidentally, such creatures lose the possibility of further advancement in the direction of the higher vertebrates, not merely because they have become specialists, but also because the adaptibility of the cerebral hemisphere upon which real progress depends has been sacrificed in the acquisition of visual efficiency.

After discussing other variations that occur in fishes, the enormous changes effected in the brain by the adoption of life upon land and the emergence of the Tetrapoda were next considered.

The new mode of life demanded not only the develop-
ment of entirely new modes of locomotion, but also a transformation of the distance receptors of the hind-brain, as well as the organs of smell.

For the organ that was evolved to detect slight move-
ments in the water became the organ of hearing, and the olfactory mucosa, which specialized to respond to the very delicate forms of chemical stimulation, now became highly sensitive and adapted to appreciate the more subtle effects of minute air-borne particles of odoriferous substances.

The heightened powers of smell, the new powers of hearing, and the necessity for acquiring new methods of locomotion, provided a powerful stimulus to the cerebral hemisphere; and there are reasons for supposing that the earliest Tetrapoda were provided with a brain with a well-
developed cerebral hemisphere. But the surviving living descendants only in part emancipates themselves from the aquatic mode of life, and were satisfied with slow-going clumsy movements of a simple character. As the result their cerebral cortex underwent a process of retrogression, and the amphibia dropped out of the race for vertebrate supremacy.

But one group of proto-amphibians was more progressive. This was the one which merged the power of rapid movement and more varied response to the influence of their environment.

The sensitivity of touch, smell, vision, and hearing became heightened, and the influence of these senses so intimately interwoven by the cerebral hemisphere that the senses of touch, smell, vision, and hearing, to perform acts of discrimination in which these several senses took a definite part.

But this hypothalamus was an imperfect instrument; and when it became spread over the surface of the brain, with the higher mechanism of the neopallium, (the hypothalamus) became converted into [the greater part of the] nucleus caudatus, the putamen and the claustrum.

Reconstruction in Medical Education.

Being the Presidential Address delivered to the Metropolitan Counties Branch of the British Medical Association.

By Lieut.-Colonel W. McAdam Eccles, M.S., M.B., F.R.C.S., D.A.M.C.(C.T.F.), Surgeon to St. Bartholomew’s Hospital; President.

When Peter, in Joan and Peter, was asked by his guardian to plan his own school, Peter considered and then said, “I’d like lessons about the insiders of animals, and about the people in foreign countries—and how engines work—and all that sort of thing.”

This was revolutionary, and, according to the recognized educational authorities, could not be permitted under any circumstances; hence Sydenham’s visit to the appointed source of knowledge proved a dismal fiasco, and he was faced with the task of finding a sphere within which “reconstructed” education was really essential. He failed to find it, and by just such a degree Peter failed to secure what such an education would have provided. He was not much the worse for it, but he might have been so much the better had he had it.

The medical schools of Great Britain and Ireland have always had before them one principal object—the training of good general practitioners of medicine—and they have succeeded, for there is no other country in the world where such excellent men and women doctors can be found.

But medicine, surgery, and the sciences have been advancing, and the capacity of the human brain finds it difficult to keep pace with the advancement. For this, or no other reason, reconstruction in medical education is called for.

Let me instance what I mean. When I was a student, not so very many years ago, all the medical out-patient work was done in a poor ill-equipped set of rooms, hidden away in a remote and rather dark corner of the hospital. Now there is a whole suite of rooms, well lit, well equipped, and used solely for its purpose. All the operative work on the surgical side was performed in a single operating theatre not used every day of the week. Now there are thirteen operating rooms of various sizes and for different departments. The entire accommodation for pathology was a poorly furnished room off the physiological depart-
ment, enough perhaps, as only about half a dozen varieties of bacteria were known. Now the sections of pathology, general, histological, bacteriological, chemical, and research, are housed in a building which cost £30,000; and so it is with every other department.

In the face of these facts how is the student to be taught so that what he learns shall be adequate and sound? This is really the problem that is now existing in medical edu-
cation. The old was good, and the good that was in it must not be lost. The new is better, but its very vastness implies a danger. The preliminary and intermediate sub-
divisions, all of which are so important in themselves, have the possibility that they may be taught from an academic rather than from a practical point of view.
MEMORANDA.

MEDICAL, SURGICAL, OBSTETRICAL.

ACRIFLAVINE IN THE TREATMENT OF GONORRHOEA.

In a memorandum in your issue of June 7th Captain Armstrong cites his experience with acriflavin, in contradistinction to that of Davis and Harrell, as evidence of the divergent views of different observers. May I offer a few suggestions which may enable any who have met with similar difficulties to approximate the clinical results to the laboratory results which are acknowledged?

One must be as confident as it is possible to be that the infection is limited to the anterior urethra, and not to the prostate or to the syringe method of treatment. The main point in connection with the time of discharge there must be no increased frequency of micturition, and, of course, neither pus nor blood in the second urine. But in spite of careful selection, there will be a considerable percentage of error owing to cases coming under observation during the incubation period of posterior urethritis. For this and other reasons I prefer a routine treatment the lavation method described in my paper published in this Journal on May 10th.

Acriflavin solution 1 in 1,000 may be irritating to the urethra, if used frequently and freely, or if unfiltered. When using the syringe method I prescribe a strength of 1 in 500 acriflavin in 1.6 per cent. sodium chloride solution, which is filtered by the dispenser, and in use is diluted with an equal quantity of warm water. The directions are that the syringe is to be used three times a day, and in the night if occasion serves; the urethra is to be gently but thoroughly washed, the solution must be taken on each occasion. There is, however, no reason why a weaker solution (say 1 in 2,000) should not be used in a sensitive urethra; irritation must never be allowed. For lavation 1 in 500 may be used.

The absence of gonococci at the end of three weeks' treatment in 17 of the 23 cases quoted is so far satisfactory. The presence of pus cells and mucus was to be expected in the irritated condition of the urethra as described. The six cases in which gonococci persisted called for further examination and a fuller diagnosis. There may have been posterior urethritis, a minute cystic gland oozing at intervals, or a long infected duct; any of these call for special treatment.