who are prepared to be expert in it. The results would justify their venture. Public health work is for all intents and purposes a State institution now; there has been some talk of taking over the hospitals (a much more difficult and perilous undertaking). We spend an enormous sum every year on hospitals or homes for incurables and on asylums for maintaining thousands upon thousands of hopeless lunatics. It is not suggested these should all be destroyed, though many thoughtful people have strong opinions on the subject. But if all this expenditure on perfectly useless life is considered legitimate, how much more legitimate would be an expenditure on the production of new life in the shape of an increased birth-rate?

I do not propose any elaborate scheme but merely an outline which may serve as a basis for discussion. Only the matter ought to be faced *now*, and not allowed to drift into another generation. First of all, we cannot admit any class distinction; rich and poor must equally feel they can have the advantage of scopolamine-morphine if they wish, so that we may hold out the inducement to all. To the large number who have refused maternity solely or mainly on account of the ordeal we may then say, "Your objection has been overcome, and you may now enter on pregnancy without the least fear."

The scheme in view would be the establishment in all large towns, in some very quiet part, and perhaps in certain other centres, of a combined midwifery hospital and home. Half, or some such proportion, of the beds could be reserved for those who could well afford to pay adequate fees, the remainder for those who perhaps could not afford any fee. It might even be practicable to have an intermediate grading. At all events the income from the one part would go largely towards maintaining the whole institution, and the burden on the State would, I venture to think, not be so great after all. The patients in the one part would have a bedroom each where the labour would be conducted. There would be one or more dining-rooms, as needed, common to this part. The others would be in rooms each of which would accommodate four to half a dozen beds, and to each of which would be attached one small lying-in room where the labour would take place. As for staff, one nurse can quite easily and efficiently attend to two patients in the better-to-do section if they are in contiguous rooms, an extra fee being charged if a patient preferred a nurse exclusively. In the small ward-rooms a nurse could easily manage one with some additional help from a probationer. There would be a superintendent obstetrician with assistants, the number of whom would be governed by the size of the institution. The success of it all would depend upon the enthusiasm of the staff, and only those in sympathy with the work would undertake it. This would be a very different matter from public opinion trying to coerce every practitioner into using scopolamine-morphine regardless of his individual objections, which might be perfectly valid.

I believe any Minister who had the courage to initiate and carry out some such scheme would deserve more than ever the country could repay him. The field is white unto harvest, only the implements and the reapers are needed.

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¹ *The Declining Birth-rate*, p. 33. (New Tracts for the Times.) By Sir A. Newsholme, K.C.B., M.D. ² *The Declining Birth-rate* (Report by the Commission), p. 75. ³ *Ibid.*, p. 78. ⁴ *Scopolamine-morphine Semi-narcosis during Labour*. Oxford Medical Press.

THE CURE OF MULTIPLE WARTS ON THE FACE.

By CHARLES IND, M.D.,

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THE removal of these tiny growths, judging by what I have witnessed, is often very difficult.

A recent patient's troubles have been the means of my devising a plan, a combination of two methods suggested separately by other dermatologists, which seems to give a speedy and admirable result.

A man, aged 35, had had the warts for eleven years. He had seborrhoea sicca of the scalp, and suffered from an extreme grade of seborrhoea oleosa of the body and face; the latter I consider not unimportant as far as the etiology of the warts is concerned.

The warts were of the variety known as verruca plana juvenilis (Stelwagon), tiny roundish bodies situated on the forehead and closely set, especially as they neared the hair border. On the forehead there were about ninety at least. There were several dozens also on the scalp anteriorly. They were all of the above variety. One or two increased in size, and rarely two or three would coalesce; but in the main they remained discrete. Those on the scalp were yellowish and slightly vascular, whilst those on the forehead were pale and rounded, not very easily seen unless looked for sideways.

For the whole eleven years the patient had had treatment by dermatologists and doctors, but the number of warts did not show signs of diminishing. Internally he had had lime, thyroid extract, magnesium sulphate, and arsenic, also citric and other acids. He had also undergone electrolysis, and had had ionization with magnesium sulphate, and also with sodium salicylate, but without any result, good or bad. Locally, nitric acid had been used, and had scarred him badly. Glacial acetic acid and trichloroacetic acid had also been used. The warts were destroyed by these methods and did not recur, but usually more appeared later near the site of local treatment.

The various spirit-soaps, and lotions of resorcin, sulphur, and mercury perchloride were of no use; ointments of salicylic acid and sulphur gave extremely bad results, and the patient refused to go on with them. Salicylic plaster seemed of some service, but it is unsightly and attracts attention.

Acting on the belief that warts are infectious the patient wore a removable lining to his hat, which was changed each day, and the warts were simply cut off by a sharp instrument; results were not very satisfactory and recurrence frequently followed.

Stelwagon¹ recommends the use of a saturated alcoholic solution of salicylic acid, but says that it often fails to cure. By itself it did fail; but followed by abscission it was surprisingly effective. The warts and skin around were painted three times a day for one day with this liquid. On the following morning they were cut off by a flat sharp steel instrument, bevelled on one side only; this passes freely over the healthy skin, but when it comes to the wart cuts it off, leaving a slightly bleeding point. The surface is painted at once with the salicylic solution and twice more later during the same day, three times in all. This turns the little red points to a brownish-black colour, tiny scabs form which are allowed to drop off, taking about a week to do so, and leaving a perfectly clear healthy skin. The forehead is bathed with pure alcohol once a day until the scabs have all dropped off.

1. A razor is no use, a sharp flat instrument pushed over the skin is necessary.
2. Paint three times the first day and after abscission three times on the second.
3. There is neither pain nor scarring.
4. Sepsis does not occur.
5. The treatment is useless for larger warts.
6. The use of the salicylic solution prevents pain when the warts are cut off and recurrence afterwards.

REFERENCE.

¹ Stelwagon: *Diseases of Skin*, 1902 edition, p. 522.

Groonian Lectures

ON

THE SIGNIFICANCE OF THE CEREBRAL CORTEX.

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS
OF LONDON, JUNE, 1919.

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LECTURE IV.

(Abstract.)

THE conditions revealed in the earliest fossil reptiles that have definitely taken the line of development leading toward mammals enable us to draw the inference that the hypopallium (neostriatum) and the neopallium came into existence simultaneously. But in the ancestors of the reptiles at present living the new cortex consisted mainly of hypopallium, whereas mammals cultivated both the new cortical formations. When the hypopallium, bulging into the lateral ventricle, filled up the limited space available in the reptilian brain progress in cerebral development was brought to a sudden stop. In mammals, however, the neopallium, lying upon the surface of the hemisphere, was

free to expand and develop those higher attributes which have made it the organ of the highest intelligence.

Both the hypopallium and the neopallium were differentiated to receive the suddenly increased influx of thalamo-cortical fibres which for the first time secured for senses other than smell an adequate representation in the cortex and a correspondingly increased influence over the animal's behaviour.

It helps us to understand the mechanism of the neopallium, the true cerebral cortex, if we compare the three cortical formations built up in the fore-, mid-, and hind-brain respectively from the receptive nuclei of the olfactory, optic, and vestibular nerves.

The cerebellum is an overgrown part of the vestibular nucleus; it is a mechanism which enables the effects produced by stimulation of the semicircular canals to be influenced by the conditions existing in all the muscles, joints, and skin areas of the body, so as to co-ordinate the whole muscular system to perform orderly movements for the purpose of correcting disturbances of equilibrium. But the linking up within the cerebellum of all the mechanisms which receive information from the various muscles and the building up of complex systems of nervous elements makes the organ the instrument for co-ordinating all complex and extensive movements, irrespective of whether they are concerned with equilibration or not. This cerebellar mechanism is made use of by the mid-brain and the fore-brain to co-ordinate the muscular actions which they excite.

The tectum of the primitive mid-brain contains nerve cells with widely branching dendrites, which collect into the same channel impulses coming from the eyes, the otic vesicle and lateral line organs, and the sensory nerves of the skin—all bringing information concerning the spacial relations and movements of objects in the outside world. This makes the tectum the great director of the animal's locomotion; and by means of the link established by the red nucleus the tectum can make use of the cerebellar apparatus to co-ordinate the muscles to perform the actions which it directs.

The primitive cerebral cortex had functions of a very different kind from those of the tectum and the cerebellum. It was originally the organ for appreciating the nature—the attractiveness or unattractiveness—of objects that affected the sense of smell. It was therefore the chief arbiter of the animal's behaviour; and the movements which it initiated were directed and co-ordinated by the tectum and the cerebellum. The architecture of the vertebrate brain was determined by the normal sequence of events in the primitive animal. The creature was led by smell, the organs of which were installed in the fore brain; directed by vision and the other senses, the instruments of which were connected with the mid-brain; the resulting movements were co-ordinated by the cerebellum in the hind-brain; and the consummation of the conscious experience led to the stimulation of the gustatory nuclei in the medulla oblongata, and the initiation of a complex series of unconscious visceral processes.

In the first lecture an attempt was made to explain the nature of the functions performed by the primitive cerebral cortex. It is the instrument by means of which the affective tone of the sense of smell gives coherence to a complicated sequence of events, so that all the incidents in a long and varied series of experiences are united to form part of a consecutive consciousness. Moreover, it provides the germ of the important aspect of consciousness whereby such sensations are projected and referred to happenings in the outside world. Our conceptions of coherence in space and time depend upon the activity of the fully developed cerebral cortex or neopallium.

But the primitive cortex is almost entirely devoid of the means for appreciating spacial relations. It only acquires such powers when the sensory tracts proceeding from the eyes, the vestibular apparatus, the muscles, joints, and skin, convey to it, in adequate degree, the information that is essential for such appreciations, after it has been integrated upon lower physiological levels. The new cortical formations in the Amniota are the expression of these new potentialities. The hypopallium or neostriatum is a crude and imperfect instrument for providing these spacial controls; the neopallium is the more perfect instrument, because it provides the means for a fuller development of those physiological dispositions by which discrimination and projection are rendered possible.

When it is realized that the tectum of the mid-brain is the recipient apparatus, not only of visual impulses conveying information as to movements of objects in space, but also of rhythmic wave movements either of water or air, and also of such impulses as ascend for the general sensory nerves, it is not altogether surprising to find that "the loss of power to appreciate serial movements in space is associated with inability to respond to the vibrations of a tuning-fork" (Head).

In the lower vertebrates these sensory impulses are integrated on the physiological level of the tectum, so as automatically to regulate movement; but in mammals there is also a psychical integration of such influences, which results from the physiological processes in the neopallium.

The conscious appreciation of succession, both in space and time, is strictly dependent on past events which have left their records in the neopallial mechanism. As Dr. Head expresses it, "every recognizable change in posture enters consciousness already charged with its relation to something which has gone before, and the final product is directly perceived as a measured postural change. This is the case with all the higher projectional aspects of sensation; they form a continuous series of physiological dispositions determined by previous events of a like order."

In the tectum we can study the foundations of the mechanism which makes such physiological dispositions possible. But not until the complex superstructure of the neopallium was added to the brain was it possible for the animal to acquire, in the full measure required for the learning of skilled actions, the conscious recognition of posture and movements, and the possibility of building up the physiological dispositions which, though not accessible to consciousness, are essential for the conscious appreciation of posture and movement.

When the mammalian neopallium acquired this power of appreciating spacial and postural relations it assumed direct control of voluntary movements, and the cerebro-spinal or pyramidal tracts and the cerebro-cerebellar connexions were established for the first time. The ability to recognize and measure the extent of movements made it possible the more precisely to control and regulate such movements. The acquisition by the neopallium of the power of learning to perform complex skilled actions was possible only because the sensory and visual cortex provided it with the postural information and the physiological dispositions without which such functions were impossible. In the train of these events the animal with a neopallium (more especially the Primates) gradually learned to form ideas of the size, shape, weight and texture of objects and of their position in space.

The influence of the arborial mode of life in stimulating the attainment of such ability not only in the Primates, but also in the earliest mammals, was discussed.

In conclusion, the lecturer explained that his chief aim in these lectures had been to attempt to discover how the intellectual functions of the cerebral cortex had been acquired. Biologists and physicians in the past had shown a strange reluctance boldly to face the problem that the real functions of the cerebral cortex were of a psychical nature. It is as futile to discuss the significance of the cerebral cortex without considering its intellectual functions as it would be to try to interpret the structure of an aeroplane without reference to the fact that it was meant to fly. Hence in these lectures attention had been concentrated chiefly on the attempt to explain the real work which the cerebral cortex was devised to perform.

GOOD progress is being made with the erection of the new Rockefeller Hospital and Medical Schools in Peking, the corner stone of which was laid on September 24th, 1917, by Mr. Fan Yuan-lien, Chinese Minister of Education. The site covers an area of ten acres. An adaptation of Chinese architecture has made it possible to use Chinese materials almost exclusively and to give to the buildings, in addition to the scientific and practical requirements for which they are intended, beauty of design in harmony with the great monuments in Peking. The beauty of the buildings has been increased by a Chinese treatment of courtyards, gateways, and walks. The grounds contain fine trees, many of which will be saved, together with a typical Chinese rock garden, which will harmonize with the scheme.