within the aorta at its bifurcation. On the morning of August 12th the patient's condition did not seem the worse for the operations on his thigh and loin under gas and oxygen, and the aspiration of 6 oz. of blood from the left pleural cavity. Pericardial friction was well marked, no increase of cardiac dullness could be made out, there was resonance in the left axilla, and the breath sounds were generally harsh on the left side. He died at 6.25 p.m. this day.

Necropsy.

There was surgical emphysema of face, neck, and thorax. The left chest contained a small amount of blood. There was an entrance wound in the left posterior axillary line. The pericardium contained a small amount of blood and a small tear on the posterior inferior aspect. There was an exudate of fibrin over the anterior and left lateral walls.

There was a small hole, surrounded by haemorrhage into the myocardium, on the posterior wall of the left ventricle. The interior of the left ventricle was clear except that there was a ragged tear on the septal wall, and the chordae tendineae of the aortic valve were also torn. The heart muscle was very pale and full of gas.

The liver and spleen were very congested and full of gas. In the left lung was a small haemorrhagic infarct with fragments of indurated rib; the right lung was normal.

The foreign body was found at the bifurcation of the left common iliac artery surrounded by dark red clot; the intima was apparently undamaged. There was no tear of the intima at the aortic bifurcation.

Since the second time of screening, on August 11th, the missile must have moved down the left common iliac artery and become lodged at the bifurcation. At the time of the second screening there was no difference noted in the femoral pulses, but the missile most probably moved down the aorta, passing through the aortic valve within half an hour of the first screening, when the phenomena in the left leg were noted. The patient died of general gas gangrene after having lived five days with a piece of shell free in his arterial circulation.

THE STORY OF A TOOTH-PLATE: AN UNUSUAL WAR INJURY.

BY

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DURING the battle of the Somme a soldier was buried in his shelter by a large shell. He was dug out from amongst the debris in an unconscious state, and ultimately placed on a hospital barge, and thus conveyed to the base. When he recovered consciousness on the barge, one of his first requests was for the artificial tooth-plate which he had been wearing when he was rendered unconscious by the shell explosion. The denture—an upper one—was produced from his wallet by the attendant orderly, but the patient, remarking its size and the number of teeth, quickly declared his doubt as to it being his, or if it were, he assured those in attendance that it must have been broken, and that part of it was missing.

The patient had also shown some signs of a fracture of the skull, and to this was ascribed the difficulty in swallowing of which he complained. No radiogram was apparently taken, and he was speedily evacuated to England, and admitted into one of the auxiliary military hospitals at Eastbourne. The man's story led to an investigation of the denture, which showed clear evidence of having been fractured across its palatal and alveolar portions. Examination with the screen revealed the presence of a foreign body in the thorax, and an x-ray plate showed a denture with two teeth opposite the middle piece of the sternum.

I was asked by the medical staff of the hospital to try to remove it. The use of a Brüning's oesophagoscope fitted with a Hill's tube made it possible to obtain a good view of the offending denture, and it was easily extracted *per vias naturales* by means of an Irwin Moore's forceps. So far as the gullet was concerned, recovery was quite uneventful, but the original diagnosis of a fracture of the base of the skull was only too surely confirmed by the development of a pulsating exophthalmos, which was successfully treated by ligature of the internal carotid artery by an able surgeon in Eastbourne.

The case is of interest in that a fracture of an upper dental plate was produced without any injury of the superior maxilla. This injury is by no means unique, for I have heard of similar accidents in the present war, but

the story of this particular case, where one of the fragments of the broken denture was actually swallowed by a patient rendered unconscious by the same injury that fractured the dental plate, must be almost without parallel.

ABSENCE OF THE RIGHT PINNA AND RIGHT TONSIL, WITH RIGHT FACIAL PARALYSIS.

BY

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SOME little time ago an extraordinary case of congenital deficiency came under my care. A recruit (W. G. B., aged 18 years) was brought to me, owing to the absence of the right ear.

It was quite evident that the right pinna had never developed. Smooth skin completely covered the site where the pinna should have been. There was no sign of any scar, or of any external auditory meatus. The helix was represented in a rudimentary manner as a slightly elevated ridge of cartilage beneath the skin. Darwin's tubercle was well marked and better developed than any other portion of the cartilage. A rudimentary tragus was present in the usual position, and caused a very slight elevation of the skin. Posteriorly to the tragus, the outer end of the cartilaginous external auditory meatus could be felt subcutaneously.

The left ear was normally developed. Tests of hearing gave the following results:

Left ear normal in all respects.

Right Ear.—(1) Weber's test, positive. (2) Rinne's test: (a) Air conduction just perceptible; (b) bone conduction normal. (3) Spoken voice: (a) Normal voice heard at 18 inches; (b) whispered voice not heard. (4) Politzer inflation gave sensation of crackling in the ear.

Conclusion: Partial deafness of right ear due to obstruction of external auditory meatus. The middle ear and Eustachian tube were intact.

The face showed paralysis of the right side, complete in all regions, except the angle of the mouth, where slight muscular effort was perceptible. It was impossible to make out whether the stylo-hyoid and posterior belly of the digastric were intact or not, but the hyoid bone seemed to move evenly and normally.

Sensation of both sides of the face was intact, but the vasomotor control of the right side was lost. Eyesight was poor; vision was $\frac{1}{12}$, myopic in both eyes—with chronic conjunctival thickening in the right eye due to its constantly exposed condition.

The right tonsil and right anterior pillar of the fauces were absent. There was no evidence or history of removal. The palato-pharyngeus muscle was intact, and the tongue was quite normally developed. No difference in the sensation of taste between the two sides of the palate could be detected with acid, bitter, salt, sweet, and pungent solutions. Saliva was seen issuing from the mouths of Stenson's and Wharton's ducts, and no diminution in the amount of flow could be detected on the right side.

The family history contained nothing of importance. The man is an only son of a family of seven, the fourth child of a normal father and mother.

It is worth noting that there was no injury during parturition. No instruments were used at his birth. The paralysis was present from birth.

Summary.

1. There was overgrowth at the outer end of the external auditory meatus, shown by the closing in of its margins.
2. Diminished growth at the outer end of the hyo-mandibular cleft or facial nerve region, as evidenced by the almost complete absence of the pinna.
3. Diminished growth in the soft palate or fifth nerve region, as evidenced by the absence of the palato-glossus muscle or anterior pillar of the fauces.
4. Diminished growth in the second cleft or glosso-pharyngeal region, as shown by the absence of the tonsil.
5. Lack of development of, or a lesion causing complete atrophy of, the facial nerve.

Observations.

Points for consideration are:

1. The facial nerve is chiefly concerned with the hyo-mandibular cleft, but overflows to the other regions involved.

2. The condition may be primarily one of nerve absence or nerve lesion in mid-embryonic life, with secondary non-development or partial development of the mesoblastic structures due to the loss of nerve control.

3. The muscular effort perceptible at the angle of the mouth may be due to the nervous supply of the hypoglossal.

The FitzPatrick Lectures

ON

MEDICINE IN ENGLAND DURING THE REIGN OF GEORGE III.

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

By ARNOLD CHAPLIN, M.D., F.R.C.P.,

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(Concluded from p. 690.)

VIII. PHYSICIANS WHO DETERMINED THE ADVANCE OF MEDICAL KNOWLEDGE.

FROM the general topics discussed in the earlier part of his lectures Dr. Chaplin went on to give an account of the individual work of physicians during the reign of George III, considering first the work of those who contributed to the advancement of medical knowledge and then giving an estimate of the activities of those who widened the boundaries of general science.

An idea of the scope of medicine taught during the first thirty years of the reign could, he said, be formed from the work of Dr. George Fordyce of St. Thomas's Hospital, the *Elements of the Practice of Physic*, which appeared to be the chief students' textbook of those days. For thirty years Fordyce lectured on medicine at his house in Essex Street, Strand, and his book might be taken to be the substance of what he was accustomed to teach. Its first hundred pages were devoted to the natural history of the human body—physiology—the remainder to the symptoms, distinctions, prognostics, and cure of fevers and inflammations, all the morbid conditions physicians were called upon to treat being included under these heads. In accordance with the doctrines of the time, little or no attempt was made to distinguish and classify the various forms of fever.

The elder Heberden was the great prototype of the modern clinical physician, and the connecting link between Sydenham on the one hand, and Bright, Addison, and Watson on the other. His *Commentaries*, published after his death in 1801, contained the results of his study and experience, extending over sixty years. So sound was his doctrine, so cautious its treatment, and so endowed with excellent common sense that much of it would require little editing at the present day. It contained no fantastic theories, no appeal to metaphysical disquisitions, but simply the results of the close study by an acute observer of signs and symptoms of disease at the bedside. Dr. Chaplin referred next to Sir George Baker, a former president of the College, whose essay on lead colic might justly be quoted as a model of inductive logic.

Towards the end of the eighteenth century the existing order of clinical physicians, which depended entirely upon knowledge gained at the bedside, was beginning to be replaced by a race who enlisted the sciences of chemistry, anatomy, and physiology in order to elucidate many problems. The desire to profit from knowledge gained by an examination of diseased parts on the *post-mortem* table received its first stimulus in England in the publication, in 1769, of Dr. Alexander's translation of the great work in which Morgagni for the first time directed anatomical knowledge to the service of medicine. The study of morbid anatomy was carried on and advanced in France by Bichat; but it was Matthew Baillie, great as a physician and great as a morbid anatomist, who was the father of medical pathology. His celebrated book on *The Morbid Anatomy of Some of the Most Important Parts of the Human Body*, published in 1793, was the first English treatise on morbid anatomy. Baillie summarized the purpose of his work under the four following heads: (1) To explain the changes of structure arising from morbid conditions; (2) to distinguish between morbid changes which have been generally confounded; (3) to detect diseased alterations in

the organization of parts which are but little or not at all known; (4) from the observation of morbid structure theories taken up hastily about disease will be occasionally corrected." The chief characteristics of the work were its conciseness and accurate observation; the plates, produced after the appearance of the book, afforded unimpeachable evidence of Baillie's unerring accuracy. Baillie scarcely lived to see the full fruits of his pioneer work, but looking back we could detect in it the beginnings of the science of pathology.

At about the same period the sciences of chemistry and pathology were beginning to be seriously applied to the art of medicine. Chemistry had received considerable attention from certain London physicians, one of the first of whom was Dr. William Saunders of Guy's Hospital, who lectured on chemistry from 1766 onwards. He assisted Sir George Baker in the chemical part of his inquiry into lead colic. Berzelius greatly stimulated study of the subject of animal chemistry, and a translation of his essay on the *Progress of the Present State of Animal Chemistry* was published by Young. It was, however, Dr. William Prout who was the first physician to bring a sound and comprehensive knowledge of animal chemistry to the aid of practical medicine. Prout was one of the famous quartet of great scientists, the others being Young, Wollaston, and Wells, who adorned the medical profession towards the end of the reign of George III; but unlike the other three, he added to his great scientific attainments practical ability as a physician. He began to lecture on chemistry in 1813, and many fundamental truths concerning metabolism were first stated by him, among them the facts that urea was formed in the blood and merely excreted by the kidneys, and that the healthy stomach contained always a percentage of hydrochloric acid. He also was the first to enunciate the doctrine of "secondary assimilation," but his views were to a certain extent purloined by Giessen and Justus von Liebig, and given to the world under the high-sounding title of the "metamorphoses of tissues."

Dr. Chaplin turned aside to speak of the work done in dermatology by Willan—who was the first to place the classification of diseases of the skin on an anatomical basis—and of the progress in midwifery achieved during the reign. Apparently no definite instruction in midwifery was given in London until 1739, when Smellie began a course of lectures. In the same year Sir Richard Manningham established a ward in the Westminster Infirmary for lying-in women, and soon afterwards lying-in hospitals began to be erected, of which the earliest was the British Lying-in Hospital, founded in 1749, with William Hunter as its first physician.

IX. PHYSICIANS WHO CONTRIBUTED TO THE ADVANCE OF SCIENCE IN GENERAL.

Thomas Young.

Reverting then to the quartet of physicians superlatively great in science, Dr. Chaplin spoke next of Thomas Young, of whom he said that it was almost impossible to realize the extent and depth of his mental capacity. Physics, classics, mathematics, Egyptology, philology, music, biography, and actuarial science, he made them all his own; with him there was never any hurry in the acquirement of knowledge, each subject in turn was taken up and deliberately exhausted before another was attempted. He was fortunate in receiving a legacy of £10,000 from his uncle, together with a house and its contents in Norfolk Street, Strand—bequests which relieved him of the necessity of drudging for a living. After visiting Edinburgh, Göttingen, and Cambridge as a student, he was in 1802, when in his twenty-ninth year, appointed to deliver lectures on natural philosophy at the Royal Institution, and at about the same time published his undulatory theory of light, which the scientific world, with the exception of Arago and Fresnel, hesitated for some years to accept, owing largely to Brougham's attack. In the domain of Egyptology, in which he began really to interest himself about 1816, Young met with even more opposition, and had to see much of his work pilfered by others, the chief offender being the great Champollion. There was, however, no doubt that Young could claim priority over Champollion in the discovery of phonetic hieroglyphics from his study of the Rosetta stone. Some of the failure of Young to obtain recognition for his work in science was to be