

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Intimate Structure of Bone*.—MR. JOHN QUEKETT, in a communication to the Microscopical Society, Nov. 11th, stated he had ascertained that the cells of bone bore a certain relation in point of size to that of the blood discs. Thus, for instance, the blood discs were found to be largest in reptiles, smallest in birds and mammalia, and mixed in fishes of an intermediate size; and Mr. Q. has discovered that the bone cells follow the same law. The syren, proteus, and axolote, which have the largest blood discs of all the vertebrata, have also the largest bone cells.

2. *Process of Secretion*.—MECKEL, in a very elaborate paper on the glandular apparatus of lower animals (*Mikographie einiger Drüsenapparate der niederen Thieren. Müller's Archiv., Heft i., 1846*) mentions a circumstance observed by him, which he considers may offer some explanation of one of the hitherto unsolved problems relating to the process of secretion, namely, the discharge of the secreted fluid solely on the free surface of the secreting membrane, or its passage towards the cavity of the glandular canal, instead of being collected in the interstices of the secreting organ. Having carefully cleaned from all trace of albumen a portion of the lining membrane of the shell from a hen's egg, he tied it over the mouth of a glass cylinder filled with albumen, the internal surface of the membrane being directed inwards. The cylinder was then immersed in water, and, as might be expected, a portion of the water was speedily absorbed into it through the animal membrane; yet none of the albumen escaped. Upon reversing the experiment, by filling the glass cylinder with water, and placing it in a vessel containing albumen, a portion of the albumen was endosmosed, whilst scarcely any water was exosmosed in its stead. The membrane, therefore, appeared to allow the permeation of fluids from without inwards, but not at all, or to a very slight extent, from within outwards. In the opinion of Meckel, the membrane forming the glandular canals of a secreting organ may in some cases be constituted so as, like the lining membrane of the egg-shell, to allow of the passage of fluid through it in one direction, but not in the opposite.—*Kirke's Report in Ranking's Abstract*, vol. iv.

3. *On the Properties of the Bile*. By M. BLONDLOT.—The experiments which were some time ago performed by Schwann [see the number of this Journal for January 1847, p. 185, *et seq.*], with the view of determining the question whether the bile, besides being excrementitious, serves any important part in the economy, have been recently repeated with some modifications, and apparently with very different results, by Blondlot,* who is led to conclude that the bile, after leaving the liver, is of no further use in the process of digestion, being essentially and entirely an excrementitious fluid. In the first of his experiments,

* *Essai sur les Fonctions du Foie et de ses Annexes.* Paris, 1846.

Blondlot first established in a dog an external fistulous opening into the gall-bladder, and then tied the ductus choledochus in two places, dividing the tube between the ligatures. The animal appeared distressed at first, but recovered in a few hours, and drank some water, though it would not take food two days after. The bile continued to flow from the external opening, and was constantly licked off by the animal, who seemed determined not to lose a drop. On the fifteenth day the external wound had cicatrized, with the exception of the small aperture through which the bile flowed; the animal was then muzzled to prevent his licking, whereupon the feces became discoloured and hard. By this time the dog had become excessively thin, though he had eaten heartily; but he now began to regain flesh, and at the end of three months from the operation was in perfect health and activity, and continued so. The quantity of bile which continued to flow from the fistulous opening was from 10 to 12 drachms daily. This quantity was manifestly increased when fat, sugar, or other non-azotized substances were swallowed. All efforts with the abdominal muscles, as in voiding the excrements or vomiting, momentarily increased the quantity poured out. None of the resinous principle of the bile could be detected in the feces. Another animal which was operated on in the same way, and presented the same phenomena, was killed at the end of forty days, when it was found that the ductus choledochus had completely disappeared, a fact which would seem to render it probable that a like obliteration had taken place in the dog first experimented on. From the results of these two experiments, which seem to be the only ones on which the conclusion is based, M. Blondlot deduces that the bile takes no important part in the process of digestion.—*Ibid.*

4. *Supplementary Spleen, death from the patient being placed in the supine position.* By W. H. BAINBRIDGE, Esq.—(*London Med. Gaz.*, Dec. 1846.)—The subject of this case was a man *ætat.* 53, admitted into the Northern Hospital, with fractured thigh. This was dressed in the usual way, and he did very well for two or three days, when he complained much of pain in the back; this was followed by tympanitis; the bowels not having been opened since the accident, purgatives and enemata were administered, but the constipation resisted all measures for its removal, and the patient died on the 7th day after the accident.

Autopsy.—Intestines generally distended: no traces of peritonitis. On pushing the small bowels on one side, a tumour, about the size of a duck's egg, was observed lying on the pelvis, and connected with the great omentum, which it dragged down, and formed a band of cord, which passed in front of the large bowel at the commencement of the rectum, pressing it against the posterior part of the brim of the pelvis. When on his back the tumour would necessarily fall into the cavity of the pelvis, and cause the cord of the omentum above described to exert so much pressure on the bowel as to impede its functions. On further examination, the tumour was found to be a supplementary spleen, enclosed between the layers of the omentum, and receiving for its supply one of the divisions of the splenic artery, which, in fact, divided into two branches,—one to each spleen. The supplementary spleen was of the normal shape of that organ, on a microscopical examination exhibited conclusive proofs that it was a spleen by the peculiar disposition of the arteries and veins in its tissues;—in its well-marked fibrous and trabecular character and the remains of the Malpighian corpuscles;—in the existence of a few distinct granules, with the remains of others: and in the complete absence of anything like a microscopic cell-structure.

5. *On the Nature and source of the contents of the Fœtal Stomach.* By GEO. ROBINSON, M. D.—(*Monthly Journal of Med. Sci.*, Jan. 1847.)—Whilst all physiologists who have examined the appearances presented by the alimentary canal of the fœtus, agree in representing the small intestines as actively engaged in the function of digestion, a remarkable difference of opinion has prevailed as to the source of the nutritious matter thus submitted to that process. Dr. Robinson's attention was directed to this subject by an accidental observation of the stomach of a fœtal rabbit; and having subsequently examined the fœtuses of other animals, he met with a number of curious facts, which he communicated to the Royal Society of London, in June last.

The following are the general conclusions which he draws from these facts:—