might be remedied by the system of fish ladders. They were sometimes stopped by a net, and at other times were attacked by the seal. "If," said Mr. Bertram, "the seal is a nuisance, it is the seal." [Laughter.] When young, too, salmon were killed by herons and cormorants, not always from hunger, but for the mere sake of sport. The sulfite, however, was the great rascal, stopping the fish by his water wheels. Mr. Buckland proceeded to describe the measures that had been taken during the past few years for the breeding of salmon in our rivers, from which he looked forward to great results.

On Conchita Beancore, C. celtica, and other Marine Annelids from the Hebrides, by Dr. Carpenter, F.R.S.

On the Probable Cause of the Existence of a Small Protuberance on the Occipital Bone, usually referred to by the late Professor E. Forbes, by Professor Macalister, F.R.S.

On the Distribution of the Common Mole (Talpa Europea), by C. Spence Bate, F.R.S.

Notes on Lepidosiren, and Reference to the Question of its Origin as a Species, by E. Percevel Wright, M.D.

A Few Remarks, Speculative and from Observation, on Color and Chromula, by Mr. J. Cox.

On the Occurrence of Lemur ardrius in Epping Forest, by Mr. W. Moggridge.

Notes on Fishes Collected Recently from the Mediterranean to the Crest of the Maritime Alps, by Mr. W. Moggridge.

Section D—Department of Physiology.

Demonstration of Local Anæsthesia, by Dr. Richardson, M.A., M.D.

Dr. Richardson described a series of demonstrations of his new mode of producing local anæsthesia in the narcotic spray. He used a large and improved instrument which he had had made by Messrs. Sessan, and various volatile fluids—viz., ether, mixture of ether and ethel chloride, ethel chloride, methylic alcohol, and a paraffin ether possessing a low boiling point. Having first tried them on his own arm, the author rendered four inches of surface insensible, which had passed unperceived through the flesh very deeply and easily, without pain. Mr. Grove, the Secretary of the Association, next tried it on his own arm, and was subjected to a similar experiment with perfect success. Dr. Richardson then proceeded to the use of the instrument which he him to this method, and in this part he referred to special cases of the use of it by several surgeon colleagues of Dr. James Arnott. He next dealt on the physiological action of the narcotic fluid, as far as the present principle was concerned, he considered the injection was now nearly perfect, and by it operations of the most extreme kind could be painlessly performed. The large tube he had found necessary to be more than six inches of surface with spray, and rendered that surface insensible. In respect to the fluid, it was to be used at ordinary with absolute ether; true, with the paraffin fluid it was necessary to heat the insensible part by the ordinary blaze of the bellows, but the effect was limited to that surface, and penetrated no deeper, and there was often irritation and redness afterwards, which the author considered was due to the ether spray, and describing that no ill effects of a serious kind followed the local anæsthetic method, and that in itself was perfectly safe in regard to life. Dr. Richardson passed on to consider certain subjects of a physiological character—viz., pain, &c. He fixed the freezing point of the tissues of this nature at 15° C. He described the great heat of fluidity of the various tissues, and assigned to the nerve matter a heat of fluidity of 20° C., and to the pulmonic circuit of blood, 8. He stated his conclusions as to the way in which pain was discharged, and by which sensibility is sustained, is a form of heat. 4. He contended that the general heat of the body maintained by respiration was not actually the same in principle. Both acted by heat, but the heat of respiration was that when a general anæsthetic was employed, it, by depriving the blood of its heat to the lungs, and thereby the brain of its required force, cut off the brain from the seat of its power. 5. He stated that the local anæsthetic was used it cut off simply the force of sensibility that was resident in that part itself. The author concluded by explaining the various operations on horses and other inferior animals which had been performed painlessly by the Messrs. Mavor under his method of anæsthesia.

On the Movements, Structure, and Sounds of the Heart, by Dr. Gaskell, M.D., F.R.S.

The author's experiments on the movements were made on the ass under the influence of wourali, assisted by Mr. Sheppeky, and on dogs under chloroform, assisted by Dr. Bradbent and Mr. Edwards. The contraction of the ventricles began at the apex; direction towards the region of rest, which, in the right ventricle, corresponds with the anterior coronary sinuole; in the left ventricle, with a situation about midway between apex and base. The movements of the right ventricle are very striking. The base moves extensively from right to left. The auriculo-ventricular groove is full to the origin of the pulmonary artery descends, and the lower boundary of the ventricle descends. The wall and base of the left ventricle approximate; its posterior walls advance considerably, and the border moves to the left, and with a twisting motion from behind forwards. The auriculo-ventricular groove has a similar movement of the apex. Simultaneously with this rhythmical contraction of the ventricles, there is a universal distension of both auricles, the pulmonary artery, and the aorta. The ventricles are pulled from the chest into the place left vacant by the universal retraction of the ventricular base. The total amount of blood contained in the heart and great vessels is the same during both systole and diastole. The ventricles, therefore, contract, however, the distribution of the blood, lessened towards the region of rest, which, therefore, becomes increased in that of the base, since the auricles and great vessels are distended, not only towards the ventricles, but also outwards and upwards. During ventricular dilatation the reverse takes place. The apex is pressed for ce on its back, the ventricular walls of both ventricles advance during systole, but when one side has their regions of rest, the fixed prop be then placed behind the base of the left ventricle, the front walls again advance. The advance takes place even to a greater extent, under the left auriculo-ventricular groove, than at the apex, and the ventricles contain no blood, and also during the auricular systole. At the beginning of system, and papillary muscles are successively removed. This advance of the ventricular walls is opposed by the pressure of either muscle or, in an artificial prop, is due to a lever movement, which, by means of the septum, acts on the walls, at one side, or the apex of the ventricle, or when they are fixed by the papillary muscles on the other. In each instance propelled outwards to a considerable extent, and that although at every part except the front the wall itself then retracts. This propulsion of the finger is very much lessened, though not entirely abolished, when the blood is shut off from the heart, and it is due, to a slight extent only, to the elasticity of the walls, but also to the front of the heart, slightly to the lever movement, but chiefly to the outward pressure of the blood contained in the cavity. This pressure caused by the ventricular systole is equal in every direction, and is, therefore, as great on the walls as the outlets. The author then described the arrangement of the cavities, valves, and muscular walls of the ventricles, and concluded by recounting his experiments on the sounds of the heart, and giving the explanation of their causes.

On the Stone Implements and its Headquarters in the Blood, by Mr. W. L. Scott.

Section D—Department of Anthropology.

The Sarsacens in France, by Dr. Gustave Lagneau.

This paper elicited some remarks on the existence of Sarsacen remains localities in this country.

On the Traces of an Irish Lake Dwelling, found in the L'Estrange, by Professor Tennant.

The Professor exhibited some articles found in the lake dwelling in Carran. The Professor said Capt. L'Estrange, stating that some bones were found, and, according to metal implements, were a piece of cast iron. The piles were chiefly of oak.

Mr. E. Kevans remarked that there were lake dwellings in Ireland down to a far later date than that mentioned by Professor Tennant. He mentioned them in his description of Ireland.

Mr. Tylor said he believed lake dwellings existed in Switzerland in Roman times.

The President (Mr. Wallace), Mr. Pengelly and other gentlemen, urged the importance of a scientific investigation of lake dwellings wherever discovered.

On Flint Implements from Drift by the Little Ouse Valley, in the part separating Norfolk and Suffolk, by Mr. H. Prigg.

In the gravel bed pit near Thetford and Brandon, a large number of flint instruments had been found, principally the knives of various descriptions; and the paper described at length the specimens found, and also the physical outline of the country. No specimens were, however, forthcoming.

Mr. Wyatt, whilst admitting the value of this paper as a record, thought that one of the most glacial deposits yielded these ancient tools, urged the importance of having perfect sections drawn, and the whole of the phenomena well examined. In the consideration of a case of this kind, where the sections were perfect, land and fresh water shells were the strongest evidence of the antiquity of the implements, and it was to be regretted that in this instance none were forthcoming, as they, together with the position of fossil mammalia and the implements, were necessary to be examined before any opinion could be pronounced satisfactorily formed as to the antiquity of the deposits. He said this to urge that in the examination of this section, more especially as he had already been able to see *good evidence* in case of this kind, where the site, and had seen specimens of the implements, and was of opinion that the deposit was contemporaneous with the Red Crag of Suffolk and Ouse Valley and St. Acheul. Some of the tools were manufactured of the flint of the Upper Chalk near Bedford, and others closely resembled some he had seen from Egypt.

Mr. Flower described fully the Thetford sections, and said he agreed with his friend Mr. Wyatt in regard to the age of the implements. He then said he had observed a flattened part in many specimens, which he thought was where the ball of the thumb might be placed upon them. He believed they were for the purpose of the surfaces for digging up roots or other rude husbandry.

On Flint Implements recently Discovered in North Devon, by Mr. H. S. Ellis.

The author read the following paper.

Sir J. Lubbock suggested that some of the pieces of flint were probably used for drilling holes, and others for scraping.

Mr. Wyatt said these flint implements which had been found in Devonshire resembled in form of a much later epoch than that in which the first described implements were used, and they must certainly belong to the epoch of a later date.

The President remarked that if there was an exceedingly long period during which man partial existed all over Europe without any weapon except such as he could make of stone, it would be a matter for some surprise as to the discovery of so large a number of those weapons. They must have been necessary to man, and that not every weapon used twenty were probably spoiled, and hundreds of thousands must have been made. The wonder was rather, therefore, that they were not found everywhere in the drift deposits, and eventually concluded that districts where no flint weapons were found were not inhabited at all during the stone age.

On the Anthropology of Lower Brittany, by Dr. Paul Topin.

The author contended there were two races in France, one tall, the other short, the line of separation commencing to that which in the time of Cæsar divided Celtic from Belgic Gaul. The former were descendants of the Iberian race, tall in stature, and of a type corresponding to the Basques.

Mr. Evans believed the two tallest nations in Europe were the Scandinavians and the Basques, and that living over the sea had much to do with height.

Professor Huxley contended that length of limb and height were not adjunct to a seafaring life, and the light, lithe, active people made the best sailors.

On the Anthropology of Caracas, by Mr. A. Ernst.

The author said it was difficult to give information concerning the number and characteristics belonging to the mixed races, as all were "Cindacan," or "Indian," and the mixtures were unknown. A difference, however, existed in society, and it would, perhaps, never completely disappear. Persons of mixed blood of white and Indian, whose black to the almost perfect white, so that colour was not a good criterion. There was more security in the hair, the tint of the nails, and the colour of the organs. The son of a white father and a negro mother was called "mulato," while the son of a similar father and an Indian mother was termed "zambo." When a man of mixed blood married a woman darker than himself, and his children became lower in appearance from the first mixture, it was said to be "*un salto atras*." The Indians were generally the smallest and weakest of the population, and no doubt would be for a long time.