field. Some experiments are described with iron diaphragms, and it is generally inferred that for all telephones of a given magnetic field there is a given thickness of the iron diaphragm which yields a maximum effect.—On the solubility of salts, by M. H. W. Bakhuis Roozeboom. This is a reply to M. Le Chatelier's critical remarks (*Comptes rendus*, March 18, 1889) on the work recently published by the author on the conditions of equilibrium between the solid and liquid combinations of water with salts, more particularly with calcium chloride.—On methylacetanilide, by M. H. Giraud. It is pointed out that the scientific name of ortho-methylacetanilide given to the *exalgine* recently prepared by M. Brigonnet, can only be applied to the substance described by Beilstein and Kuhlberg under the name of aceto-orthotoluide. It is further shown that M. Brigonnet's preparation is not new, that it was described by Hofmann in 1874, and that its true name is methylacetanilide.

BERLIN.

Physiological Society, March 27.—Prof. du Bois-Reymond, President, in the chair.—Dr. Klemperer spoke on the proteid needs of the animal economy in health and in certain pathological conditions. Voit's teaching, that the human body in health requires daily from 100 to 120 grammes of proteid in order to supply its nitrogenous needs, has been recently contested from many sides; and even if the experiments on which the attacks were based were not altogether free from some defects, they still sufficed to cast a good deal of doubt on Voit's theory. The speaker had endeavoured, working from the clinical point of view, to decide the question whether an increased proteid metabolism can be prevented or diminished by an increased ingestion of carbohydrates or fats. He carried out experiments on the nutrition of two healthy persons, in which the daily dose of proteids was very considerably diminished, even down to 40 grammes, while in compensation for the lessened proteids larger quantities of fats, sugar, and easily absorbed and oxidizable alcohol were administered. The nitrogen excreted in the urine was constantly less in amount than that taken in the food, thus showing that healthy, active men can be fed with largely diminished amounts of proteid without the occurrence of any destructive metabolism of their tissue-proteids. He next proceeded to investigate whether, in diseases which are characterized by an abnormally large breaking down of tissue-proteids, this increased nitrogenous metabolism could be lessened by the ingestion of an increased quantity of non-nitrogenous food. An increased nitrogenous metabolism occurs in dyspnœa, fever, anæmia, cancer, tuberculosis, diabetes, and Addison's disease. For dyspnœa, experiments were made on animals; while for anæmia, cancer, diabetes, and Addison's disease, observations were made on the human subject, and results were obtained which corresponded to the supposition under which the experiments were started. A very considerable reduction of the nitrogen excreted in the urine was observed when only moderate quantities of proteid were given, while at the same time increased amounts of carbohydrates, fats, and alcohol, were administered. It is impossible to enter here into the interesting details of these experiments, which were all carried out by very precise methods, or into a discussion of the hypotheses which were advanced in explanation of the phenomena which had been observed.—Prof. Rosenthal, of Erlangen, gave an account of calorimetric experiments with which he had been busied for the last few years. He employed in these an air-calorimeter of special construction. It consisted of a copper vessel, of easy ventilation, in which the animal was placed; this was surrounded by an air-tight envelope, filled with air and constituting the reservoir of an air-thermometer; external to this was a covering to shield the whole apparatus from any changes in the temperature of the surrounding atmosphere. When the animal gives up to the envelope of air, per unit of time, exactly the same amount of heat as the whole apparatus radiates into the surroundings, the temperature of the air in the envelope remains constant, as also its *pressure*: hence the heat produced and given off by the animal during any known time could be measured by means of a manometer. Notwithstanding that the dog used in the experiments was fed in exactly the same way at each meal, the quantities of heat produced varied very largely, and any considerable uniformity is only obtained by taking the mean of a long series of observations. Up to about the third hour after the meal the heat-production diminishes, then rises rapidly to a maximum, and from this point, at about the eighth hour, it begins to fall again slowly and with irregularities, until the next meal. Over the whole twenty-four hours the heat-production is more uniform during the second period of twelve hours than in the first; about 20 per cent. more heat is produced during the first than during the second half of the whole day. When an excess of food was given the heat produced was always less than that calculated out from the oxidation of the food itself; but with a uniformly constant diet the mean value of the heat produced corresponded to the heat calculated for the oxidation of the food. The amount of carbonic acid gas given off by the animal was found to correspond to the heat given off during the same period only in cases where prolonged intervals of time were taken into account. When the surrounding temperature varied between 5° and 25° C., all other conditions remaining the same, a minimal production of heat was observed at 15° C.: from this point it increased uniformly in both directions, not only when the temperature fell to 5° C., but also when it rose to 25° C.—Prof. Schweigger demonstrated several pieces of apparatus, which by the use of small incandescent electric lamps, could take the place of the ophthalmoscope, and even render a binocular examination possible. They also made the measurement of refraction in the eye both simple and exact.

BOOKS, PAMPHLETS and SERIALS RECEIVED.

The Useful Native Plants of Australia (including Tasmania): J. H. Maiden (Trübner).—The Psychic Life of Micro-organisms: A. Binet; translated by T. MacCormack (Chicago).—The Elements of Vital Statistics: Dr. A. Newsholme (Sonnenschein).—Catalogue of the Fossil Fishes in the British Museum (Natural History). Part 1: A. Smith Woodward (London).—Richtigstellung der in bisheriger Fassung unrichtigen Mechanischen Wärmetheorie und Grundzüge einer Allg. Theorie der Aetherbewegungen: A. R. von Miller-Hauenfels (Wien).—The Land of Manfred: J. Ross (Murray).—Bulletins de la Société d'Anthropologie de Paris, tome xi., 4e fasc. (Paris).—Mémoires de la Société d'Anthropologie de Paris, tome iv., fasc. 1 (Paris).—Journal of Anatomy and Physiology, April (Williams and Norgate).—Zeitschrift für wissenschaftliche Zoologie, xlviii. Band, 1 Heft (Leipzig).

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