

conditions used was not so effective as adding cod-liver oil to the diet; irradiation of various food materials also improved their calcifying action: for example, olive oil, butterfat, oatmeal, and maize germ, due to the production of vitamin D from the ergosterol present in them; as was to be expected, even small amounts of irradiated ergosterol can give nearly perfect calcification.

Vitamin D can be stored in the body; hence offspring from a mother well supplied with it show greater resistance to an imperfect diet than young from a mother kept herself on this diet; evidence was obtained that the mother supplies the young from her own stores when her intake is deficient. The structure of a tooth is permanent, so that variations in the diet at different periods will be reflected in variations in its structure; in contradistinction, imperfectly calcified bone will be re-absorbed when the diet is improved. Improvement of a bad diet will be reflected immediately in improved calcification of the later-formed dentine; but a change from a good to a bad diet will have little immediate effect, owing to the availability of the body's stores of vitamin D.

The work here presented proves convincingly

that the structure of the teeth of puppies depends almost entirely upon the intake of vitamin D. Even although the diet given was soft and pappy, perfectly formed teeth and well-developed jaws were produced, provided a sufficiency of the vitamin was given. Exercise of the jaws appears to depend upon the general health; giving an animal something hard to gnaw will not produce well-developed jaws when the vitamin intake is low.

The application of these results to man and the relationship of structure to dental disease will form the subjects of Parts II. and III. of Mrs. Mellanby's reports. Considering that rickets occurs in both man and the dog, it might be expected that diet would have an influence upon the structure of human teeth. Caries of the teeth, however, does not occur in the latter, so that a relationship between this disease and structure must be determined in other animals or in man himself. Some evidence of such a relationship has already been published (see, for example, the *British Dental Journal*, 1928; July 15); the final reports will be awaited with interest, owing to the importance of such a conclusion for the prevention of human dental disease.

Obituary.

PROF. AUGUSTINE HENRY.

AUGUSTINE HENRY was born on July 2, 1857, coming of an old Derry family, and possessing to the full the delightful characteristics of the Irish race. He was educated at Queen's College, Galway and Belfast, and was trained as a medical man, being L.R.C.P., Edinburgh. He began his career as an attached medical officer of the Chinese Imperial Customs at Shanghai. In 1882 he was appointed in this capacity to the Customs Station at Ichang on the Yangtze, where he remained for seven years. Here he commenced to interest himself in the flora, following in the footsteps of earlier medical officers in India, such as Wallich, Falconer, Cleghorn, Hooker, etc. As with these officers, it was doubtless the medicinal possibilities of the many unknown plants which aroused Henry's interest at the outset. Even more than in India, China is the home of the *materia medica*, the great therapeutic value of many bulbs, roots, and leaves of common plants being known to the Chinese. The legendary Emperor, Chennung, was, so tradition has it, a great exponent of the medicinal values of plants. So keen was this interest that it is said that Chennung had a glass window fitted into the wall of his stomach in order to study the reactions of different plants on the alimentary system! Henry will be remembered in horticultural circles as the introducer of the beautiful *Lilium Henryi* and many other Chinese plants.

It was during his sojourn at Ichang that Henry commenced his explorations and investigations into the flora, and thus became the first of a select band of adventurous spirits who investigated the flora of central and western China. One predecessor there had been, Robert Fortune, who first

went to China in 1842 to collect plants for the Royal Horticultural Society, and afterwards, in 1848, on behalf of the East India Company, introduced the tea plant into India. But Fortune's work was carried on in other parts of China. Henry's collections were chiefly of dried plants, and he wisely sent those first made to Kew, where they were received by Thesleton-Dyer with high appreciation: for their examination soon showed that a new flora was being tapped. For example, the collections from Hupeh (made in 1888), a botanically unexplored country, were found to contain 500 new species of plants and 20 new genera. It was here that Henry came across the flowering tree *Davidia*. This is now well known in Great Britain, but the seed was not sent home by Henry. Veitch, of Chelsea, sent out E. H. Wilson, who afterwards became famous for his collecting work, and the latter obtained the seed.

After a year's leave at home, where Henry found himself eagerly welcomed in botanical circles, he returned to Shanghai, and was soon transferred to Formosa (which had not then been made over to Japan). During three years spent there he collected assiduously and greatly enriched our knowledge of Formosan plants, publishing later a first account of the flora of Formosa. Henry had for some time previously ceased to practise medicine. In 1896, Sir Robert Hart transferred him to Mengtse in southern Yunnan. In this region he collected extensively, and sent home large collections containing many new species. He discovered the wild tea plant whilst exploring the virgin forests in the mountains south of the Red River in south-east Yunnan. This plant had not previously been discovered out of Assam. He was afterwards stationed at Szemao, where his

inexhaustible energy resulted in collections of equally rare and interesting plants.

During his numerous explorations Henry's interest had been aroused in trees and in the forests. When he finally returned home in 1900, after having accomplished what would have satisfied many men as a life's work, he therefore determined to study forestry. For this purpose, being then forty-five years old, he joined the French Forestry School at Nancy, where he passed nearly two years, 1902-3. It was in the latter year that, being on furlough, I accompanied the senior class of that school on a tour of the Vosges and first met Henry, who formed one of the class. To those who knew that delightful personality, it will be unnecessary to say that Henry was the life and soul of the party, and his quaint Irishisms and anecdotes, rendered into French with a rich Irish brogue, were an unflinching source of merriment.

In connexion with his forest work, Henry will be chiefly remembered for his collaboration with the late H. J. Elwes in producing the great standard work on "The Trees of Great Britain and Ireland", which was published in parts between 1906 and 1913.

It was whilst engaged on this work that Henry was appointed to the first readership in forestry founded in 1907 in the new School of Forestry at Cambridge. From that appointment he started a second life's work. At Cambridge he was chiefly interested in carrying out breeding experiments connected with trees, chiefly elms, on Mendelian lines—a piece of research work which, for some purposes, may have practical results. In 1913, Henry was appointed professor of forestry in the College of Science, Dublin, the chair being afterwards absorbed (in 1926) in the Irish National University. In addition to the "Trees of Great Britain" he published "Forests and Trees in Relation to Hygiene", and many papers in the *Kew Bulletin* and other scientific publications. His travels, apart from China, in the forests of North America and a considerable portion of Europe, gave him an intimate knowledge of the species of trees of many types, a knowledge which was ever at the disposal of all.

Henry had a wide circle of friends in many walks of life, and many will remember the kindly face, great energy, and ever ready humour which rendered so many excursions of the Royal Arboricultural Societies the more enjoyable for his company.

E. P. STEBBING.

PROF. F. V. THEOBALD.

FREDERICK VINCENT THEOBALD died on Thursday, Mar. 6, at his residence, Wye Court, Wye, Kent, at sixty-one years of age. Though a comparatively young man, he had not had good health for some time, being very susceptible to chills. Last Easter he made a marvellous recovery from pneumonia, but it undoubtedly left its mark in the form of a weakened heart. Some six weeks ago, when about to leave the house for a much-needed change, he became ill and was ordered to bed. He seemed to

be progressing satisfactorily when bronchitis set in, and this in his weakened state led to his death.

The son of the late J. P. Theobald of Kingston-upon-Thames, Theobald's early days were passed at his home and at St. Leonards. He then went to St. John's College, Cambridge. From a very early age he was attracted to all forms of Nature study, and at the early age of eight, with childish enthusiasm, he set himself the task of writing the "Fauna of Sussex". The pages in a boyish handwriting showed such promise that his parents deemed them worthy of binding, and they form an interesting first volume to his many subsequent works.

Of Theobald's later entomological work much could be written. After taking his degree he became an extension lecturer in economic zoology for the University of Cambridge, but on the opening of the South-Eastern Agricultural College in 1894 he gave this up, taking up the post of lecturer in agricultural zoology at Wye.

Besides the many reports of economic entomology which have appeared from Theobald's pen, he published "Agricultural Zoology", a standard textbook, and "Insect Pests of Fruit", a large reference work which soon found favour amongst the fruit-growers not only of Kent but also of Britain generally. About this time he was also engaged upon work on mosquitoes, and having completed his "Monograph of the Mosquitoes of the World", he turned his attention to the Aphidæ. This was some twenty years ago, and although the third and last volume of his monograph on the "Plant Lice or Aphidæ of Great Britain" appeared a year ago, he was still at work upon the group at the time of his death.

Among the numerous scientific distinctions which came Theobald's way were the election to honorary membership of the Société nationale d'Acclimatation de France, from which he received the Grande Médaille Isidore Geoffroy Saint-Hilaire; Société pour l'Étude Agricolaire Zoologique de Bordeaux; Société de Médecine tropicale de Paris; Association of Economic Entomologists of the United States, and the Royal Horticultural Society of Britain, etc. He was made an Officer of the Imperial Ottoman Order of the Osmanieh; he was also a Mary Kingsley medallist (University of Liverpool) and a fellow of the Entomological Society of London; only a few years ago he was presented with the Victoria gold medal of honour of the Royal Horticultural Society. He was also an early president of the Society of Economic Biologists; and at one time was vice-principal of the South-Eastern Agricultural College.

From 1900 to 1904 Theobald was entrusted with the arrangement of the economic zoology collection at the British Museum and resigned his agricultural zoology professorship in the University of London. In 1920 he ceased to hold the post of lecturer at Wye College, devoting his time to advisory and research work under the Ministry of Agriculture, and though this work was primarily for the south-eastern province of England, he had much correspondence from other parts of the world.