

to a certain extent the screened, lamp seemed to exert at first a stimulating effect on increase in weight, although this stimulus was only temporary in its action, and the period of increased growth was followed by one of relatively decreased growth rate, so that at the end of the experiment the advantage was with the control group. As regards infections, the evidence was definitely against the exposure to light having any favourable effect, but, for what they are worth, the subjective impressions of teachers and parents were in favour of the lamp groups.

It thus appears that, except for a possible temporary stimulating effect upon growth, exposure to light is without influence upon bodily states which are susceptible of objective measurement, but may be taken to improve, although only slightly, that state which can only be described as the general health and well-being. It may be emphasised that these conclusions only apply to the conditions of this particular experiment, and that other sources of light, etc., might have different effects; that the home conditions of the children were uncontrolled (though probably sufficiently similar in all the groups), and finally, that the control group differed from the others not only in not being exposed to light, but also in not sharing

the necessary routine incidental to this exposure, such as withdrawal from lessons, dressing and undressing, and exposure to the different temperature of the lamp room as compared with the class room.

In the second study, Colebrook investigated the influence of ultra-violet light from mercury vapour lamps upon the healing of varicose ulcers: either the leg up to the knee or the ulcer itself only were irradiated; between treatments only a simple dressing and bandage were applied. For controls, a series of cases was treated with Unna's zinc oxide and glycerine paste. The result of the investigation was that the cases treated with light of very varying intensities responded much less satisfactorily than those dressed with the paste: the difference was most marked in the case of the ambulant patients, indicating that any benefit seen under light treatment in patients kept in bed was probably largely due to the accompanying rest and not to the light. No difference was observed in the course of healing between irradiated and unirradiated areas of the same ulcer, other conditions being the same for both: and finally, relief of symptoms was not obtained during light treatment but was a marked feature in the patients treated with Unna's paste.

### Obituary.

DR. HAROLD WAGER, F.R.S.

DR. HAROLD WAGER, whose death occurred on Nov. 17, had shown his interest in science at an early stage in his career. In 1885 he was associated with Mr. Auberon Herbert as private secretary, an association which led to their collaboration in the production of a paper in the *Contemporary Review* upon "Bad Air and Bad Health", which afterwards appeared (1894) as a pamphlet. From 1886 onwards Wager went to the Royal College of Science, where he was a regular attendant at Dr. D. H. Scott's classes upon botany, and is still remembered by the latter as one of his most brilliant students.

In 1888, Wager was appointed demonstrator in biology in the Yorkshire College at Leeds. Since that date, although he has not always resided at Leeds, he has been so much identified with both science in Yorkshire and with the Yorkshire College—and afterwards the University of Leeds—that he is generally recognised as one of the most distinguished of a very remarkable band of scientific naturalists of the county of the broad acres. In 1894 he married Winifred Miall, the only daughter of Prof. L. C. Miall, the first and only professor of biology in the Yorkshire College.

On the outbreak of the War, with the consent of the Board of Education, Dr. Wager voluntarily undertook the direction of the Department of Botany during the absence of Prof. J. H. Priestley upon war service. After the armistice he remained for some time in contact with the Department, in which he held an honorary lectureship, and it was with regret that the University Council recently received his

resignation of that post when he found himself unable to keep in touch with the activities of the Department.

Through his early association with Dr. D. H. Scott, some of Wager's earliest scientific papers were upon plant anatomy, including a paper, in collaboration with Dr. Scott, upon the floating roots of *Sesbania aculeata*, but throughout his career Wager showed a catholic diversity of interest—every subject open to experiment and observation in the scientific spirit being of appeal to a man with the temperament of the naturalist and observer, and the training and technique of the student of science. He first established his scientific reputation by a long series of papers upon the cytology and life-history of the fungi, which were published during the years 1889–1900. Early in the new century he was also making observations upon the cytology of the blue-green algæ, the Cyanophyceæ; but what distinguished Wager as a student of such problems was that he never lost interest in the growing plants in the field. As a result his specialist studies of these two groups have the very unusual accompaniment that he has published in the *Naturalist* keys to the determination of species of *Oscillatoria* and *Phormidium*, and also a very useful guide to the determination of genera of the Agaricaceæ.

This interest and sympathy with the field of work of the naturalist, coupled with his specialist knowledge of technique in fields usually outside the naturalist's province, made Wager a great influence in deepening and extending the contribution of Yorkshire naturalists to biology. Under his



chairmanship the annual mycological forays of the Yorkshire Naturalists' Union have done very successful work in promoting interest in these plants, and in adding to our knowledge of the Yorkshire species. In 1913, as president of the Union, he devoted his address to a brief résumé of his observations upon the movements of free-swimming micro-organisms, a fascinating subject which showed him at his best, alike as a naturalist and as a brilliant manipulator of microscopic living organisms, alive to the fact that the infinitely small amongst living creatures still have to obey physical laws.

On the occasion of the meeting of the Yorkshire Naturalists' Union in Leeds in 1914, the University conferred upon him the honorary degree of D.Sc. in recognition of his great contribution to science and his distinguished association with the study of natural science in Yorkshire. In 1904 he had been elected a fellow of the Royal Society.

Dr. Wager's severance from academic laboratories, upon his appointment as one of H.M. Inspectors of Secondary Schools, in no way diminished his scientific activity. With simple laboratory appliances, but with an almost uncanny *flair* for microscopic manipulation, he continued to carry out observations in various fields of biology, and in particular turned his attention to a number of problems of plant physiology. His photographs through the lenses of the leaf epidermis were as beautiful a demonstration of the capacity these cell wall structures showed to focus objects, as his experiments were to show that Haberlandt's views as to the function of the 'ocelli' needed revision. He also made numerous observations upon the leaf pigments and other plant pigments, many of which, probably, have never been fully embodied in his published writings.

These unremitting scientific labours were a daily accompaniment to Wager's conscientious fulfilment of his duties as an inspector of schools. The result was, naturally, that the teacher of biology in the school, apt to have recourse to the easier path of instruction through text-book and diagram, was constantly being reminded of the wide gap that may exist between the formal description and the object awaiting the unprejudiced regard of the observer. Just as the amateur naturalist, seeing in Wager a kindred spirit, was led by his example to take more pains and extend the range of his scientific technique, so the professional teacher was encouraged to leave routine repetition of second-hand facts, to observe for himself, to become, in fact, a naturalist, and thus to develop a new enthusiasm which rapidly communicated itself to his pupils.

During Wager's long association with Yorkshire, he learnt to love the Yorkshire dales. It was in his cottage in Lyttondale that he died after a short illness, and he was laid to rest in the little churchyard at Arncliffe amongst associations that were always dear to his memory, and to those of his many Yorkshire friends. There they will like to think of him—at rest in surroundings that were always congenial to his spirit.

SIR SAINTHILL EARDLEY-WILMOT, K.C.I.E.

THE death of Sir Sainthill Eardley-Wilmot on Nov. 13, at Henley-on-Thames, removes a great forester who spent forty-seven years of his life in the service of his country. Eardley-Wilmot was the fourth son of Augustus Hillier Eardley-Wilmot, and was born on July 17, 1852. He joined the Indian Forest Service in December 1873, after having spent three years undergoing his forestry training in Germany. There can be little doubt that some aspects of this training had a considerable influence on Eardley-Wilmot's subsequent career: for he was able to appreciate to the full the advantages, as also the weaknesses, of a purely German training, when strictly applied, to the very dissimilar and varying conditions of the sub-tropical and tropical forests. Wilmot was appointed to the old North-West Provinces and Oudh, spending the first sixteen years of his service as an executive officer in charge of several forest divisions in the Provinces. In 1890 he was promoted to administrative rank and passed the following eight years as Conservator in Oudh, where his organising ability, combined with his great professional knowledge, radically changed the management of the forests by introducing a more scientific conservancy and earned him the encomiums of the local government.

It was during this period that, as a result of sylvicultural studies carried out in the forests, Eardley-Wilmot wrote a series of important papers entitled "Notes on the Regeneration of the Sál (*Shorea robusta*)"; "Notes on Sál Forests"; "Notes on Improvement Fellings"; "Sál Coppice Forests of Oudh"; "Notes on the Treatment of Shisham (*Dalbergia Sissoo*) and Khair (*Acacia Catechu*) in the Sub-Himalayan Tracts"—all of which were published in the Appendix Series of the *Indian Forester* in the nineties of last century. They formed a very valuable addition to the scanty knowledge at the time existing on the sylvicultural characteristics of these species. From 1900 until 1902 Eardley-Wilmot was in Burma, and in February 1903 was appointed to officiate as Inspector-General of Forests, and afterwards confirmed.

Apart from numerous activities in administrative directions, notably the improvements he was able to get effected in the emoluments of officers of the Department of all grades, and the steps he took to improve the forest education of the executive and provincial staff of the Department in India, Eardley-Wilmot's greatest achievement was connected with the inauguration of the Imperial Forest Research Institute at Dehra Dun. At the time Eardley-Wilmot passed through Calcutta *en route* for Burma, the then Inspector-General of Forests, Mr. B. Ribbentrop, was endeavouring to obtain the consent of Government to the appointment of a forest officer to take up special research work in forest entomology. Eardley-Wilmot was keenly interested in this new departure. The appointment applied for was made for two years, and I myself took up the work. At the end of the period the question of continuing the work was undecided. I was in charge of the Indian Museum as officiating