found also in lines running up and sometimes down the rachis from the glands. These are very active during the rapid growth of the frond, their activity ceasing on the attainment of maturity. The secretion, which is very abundant, is formed independently of bleeding pressure, and the fluid is thick and syrupy. So rapidly does it accumulate that one may notice the increase in the size of the drops with a hand lens. The secretion escapes through modified stomata similar in form to the water-stomata of *Tropeolum*. The glandular tissue beneath extends deeply into the cortical mass of the petiole; its cells are small and contain chlorophyll.

Small ants, and one honey-gathering dipterous insect were noticed visiting the glands; none were seen to be gnawed by the insects. As F. Darwin observed, the plant has few natural enemies or none, and the teleological interpretation must be sought in the internal economy of the plant, probably in connection with nutrition. The abundant excretion of sugar may be a carrier of or an accompaniment to the excretion of some harmful substance. It is noteworthy that up to the present time no other Pteridophyte has been reported to be possessed of nectar-secreting organs. The plants on which the observations were made grew near Bantam Lake, Litchfield, Conn.

Dr. Britton remarked on a young tree of the Swamp Spruce, *Picea brevifolia* Peck, found during the day in a sphagnum bog near Litchfield, and stated that this was probably the most southern known station for this species in New England. The short glaucous leaves and nearly glabrous twigs readily distinguish this tree from the Black Spruce, *P. Mariana*.

Mrs. Britton exhibited specimens of the red-flowered Columbine of the Litchfield region, and remarked on its growth in open fields and the pubescent character of the plant, differing in these features from the plant of the vicinity of New York, which inhabits rocky ledges and is nearly or quite glabrous. She noted that the pubescent plant is also abundant in fields on the Pocono plateau of Pennsylvania.

A vote of thanks was tendered to Dr. Allen for his most generous and agreeable hospitality.

N. L. BRITTON,
Sec'y pro tem.

CURRENT NOTES ON METEOROLOGY.

CLIMATE AND THE ICE INDUSTRY.

THE practical use made of nocturnal radiation for the preparation of ice in certain parts of India has long been well known. The method pursued there is to expose shallow porous earthenware dishes filled with water and resting on rice straw, loosely laid in a small excavation on the surface of the ground. When the conditions are favorable, ice is formed in considerable quantities, even when the temperature of the air is 15° or 20° above freezing. A case of a somewhat similar kind is noted by O. H. Howarth, in a paper on 'The Cordillera of Mexico and its Inhabitants,' in the *Scottish Geographical Magazine* for June. In one of the highest valleys in Oaxaca, at an elevation of 8000–9000 feet, a flourishing ice industry was discovered. It is stated that the ground is covered with a large number of shallow wooden troughs, which are filled with water, and during the winter nights are covered with a film of ice of not more than one-eighth of an inch in thickness. This ice is removed in the morning, shovelled into holes in the ground, and covered with earth. Under these conditions the ice consolidates, and is then cut out in blocks and sent down by mules to the towns, where a ready market is found at all seasons.

FROST FIGHTING.

'Frost Fighting,' is the title of Bulletin No. 29 of the United States Weather Bureau, prepared by A. G. McAdie, local forecast official at San Francisco. The question of protection against frost has been very carefully studied by the Weather Bureau officials in California during the past four years, and every effort has been made to forecast coming frosts, and also to investigate the best methods of protection. Mr. McAdie says that "the experience of the past three years warrants the statement that the loss due to frosts in California, hitherto considered unavoidable, can be prevented, and that unless extreme conditions, by which is meant lower temperatures by 5° than have ever yet been experienced in this State, occur, the citrus fruits of California can be successfully carried through the period when frost is likely." The formation of frost is found to be very

largely a matter of air drainage, and every owner is urged to make a detailed study of the movement of local air currents in his own district. Various methods of protection are briefly described, including those based on mixing the air; warming the air; cloud or fog formation; irrigation; spraying, and screening. A 'warm water method,' adopted by Mr. E. A. Meacham, of Riverside, Cal., by which water, after being heated in a small boiler, is allowed to run in furrows through the orchard, is stated to have been successfully tried. The *Bulletin* contains a weather map showing the pressure and temperature conditions which are followed by heavy or killing frosts within 12 hours in southern California, and also gives plates illustrating the different methods of protection.

R. DEC. WARD.

HARVARD UNIVERSITY.

SCIENTIFIC NOTES AND NOTES.

HARVARD UNIVERSITY has conferred its LL.D. of Dr. W. H. Welch, professor of pathology in the Johns Hopkins University.

THE University of Cracow has conferred an honorary degree on Professor Simon Newcomb, U. S. A., on the occasion of the celebration of its five hundredth anniversary.

THE Paris Academy of Sciences has elected Professor L. Boltzmann a corresponding member in the place of the late Professor Beltrami.

WE regret that we are unable to secure or to find in any of our exchanges any account of the third biennial conference on an International Catalogue of Scientific Literature beyond the fact that the delegates had a dinner.

BY the action of the Massachusetts Senate on June 28th there will be no appropriation this year for the destruction of the gypsy moth.

IT is proposed to celebrate the 70th birthday of Professor Wilhelm Wundt, which will occur on the 16th of August, 1902, by the publication a *Festschrift*, to which his former students are invited to contribute. The manuscripts must be forwarded to Professor Külpe, Würzburg, not later than January 1, 1902.

THE directorship of the Paris Natural History Museum, vacant by the death of Professor Milne-Edwards, has been filled by the appointment of Professor Edmund Perrier.

DR. ALFRED GOLDSBOROUGH MAYER, assistant of Mr. Alexander Agassiz, and in charge of Radiates at the Museum of Comparative Zoology, Cambridge, has been appointed curator of the Department of Natural Science in the Museum of the Brooklyn Institute of Arts and Sciences. He will assume his new position in September.

SIR GEORGE F. HAMPSON, Bart., who accepted an invitation to become an assistant in the Insect-room of the British Museum five years ago, has just been promoted to the post of first-class assistant, under a treasury regulation to which we have recently referred. He is the only assistant in the Natural History section of the museum to whom the benefits of this regulation have as yet been extended. But since there are many of his colleagues, men of equal reputation, who have served in the second class for twice, if not thrice, as long, it is anticipated that this good example will soon be followed. It is pleasing to find that after all, the Trustees of the British Museum are able to recognize exceptional merit, when they have special facilities for becoming personally acquainted with it.

THE Geological Society of London has elected Professor Paul Groth, of the University of Munich, a foreign member, and Professor A. Issel, of Genoa, a corresponding member.

THE Society of Arts has awarded its Albert medal for the present year to Mr. Henry Wilde, F.R.S.

THE third of the biennial Huxley Lectures, founded in commemoration of the late Professor Huxley in connection with the Charing Cross Medical School, will be delivered by Lord Lister, President of the Royal Society, on Tuesday, October 2d.

LORD AVEBURY has been elected president of the Royal Statistical Society. The Society announces as the subject for its Howard medal 'The history and statistics of tropical diseases with special reference to the bubonic plague.'

WE regret to record the death of Dr. Willy Kühne, professor of physiology and director of