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| | | | |
|---|-----|--|-----|
| <i>Environments</i> : PROFESSOR BURTON E. LIVINGSTON | 569 | <i>Scientific Apparatus and Laboratory Methods</i> : | |
| <i>Local Branches of the American Association for the Advancement of Science</i> : J. McKEEN CATTELL | 576 | <i>A Physiological Stroboscope</i> : DR. LEO A. KALLEN and H. S. POLIN. <i>Dissection as a Method of Embryological Study</i> : PROFESSOR J. A. LONG. <i>The Development of the Principal Arterial Vessels in the Rat from 11 to 16½ Days</i> : DR. MARY SANFORD LEITCH. <i>The Removal of Fluorides from Water by Sand Filtration</i> : DR. S. P. KRAMER | 592 |
| <i>Obituary</i> : | | <i>Special Articles</i> : | |
| <i>Theobald Smith</i> : DR. CHARLES R. STOCKARD. <i>Recent Deaths</i> | 579 | <i>Rare Gases not Essential to Life</i> : DR. ALVAN L. BARACH. <i>Chromosome Structure in the Salivary Glands of Sciara</i> : PROFESSOR C. W. METZ and E. H. GAY. <i>Demonstration of the Existence of Two Forms of Vitamin D in Fish Liver Oils</i> : DR. CHARLES E. BILLS, DR. O. N. MASSENGALE and MIRIAM IMBODEN | 593 |
| <i>Scientific Events</i> : | | <i>Science News</i> | 6 |
| <i>Bird Sanctuary in New York City; Ornithological Expedition from Cornell University; Exhibition and Publications at the Carnegie Institution of Washington; The Annual Meeting of the American Physical Society and the Section of Physics; Work of the Science Advisory Board</i> | 580 | | |
| <i>Scientific Notes and News</i> | 583 | | |
| <i>Discussion</i> : | | | |
| <i>Misconceptions Relative to the Mineral Composition of Plants</i> : PROFESSOR WALTER THOMAS. <i>The Acid-base Equilibrium in Sea Water</i> : DR. LAURENCE IRVING. <i>Host Responses to Haustorial Invasion of <i>Cuscuta</i> Species</i> : H. L. DEAN. <i>Bohemium—an Obituary</i> : DR. MAX SPETER | 587 | | |
| <i>Scientific Books</i> : | | | |
| <i>Brown's Scientific Organizations in Seventeenth Century France</i> : PROFESSOR CHARLES A. KOFOID. <i>Slater and Frank's Theoretical Physics</i> : PROFESSOR LEIGH PAGE | 589 | | |
| <i>Reports</i> : | | | |
| <i>The Second Annual Tri-States Geological Field Conference of the Upper Mississippi Valley</i> : PROFESSOR W. H. TWENHOFEL | 591 | | |

ENVIRONMENTS¹

By Professor BURTON E. LIVINGSTON

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THE honor of being here this evening as retiring president of the most dignified of our American biological societies is greatly appreciated, and this occasion is for me a very pleasant one indeed. I am specially glad to be allowed to represent the relatively youthful science of plant physiology on the occasion of this semi-centennial celebration of the American Society of Naturalists. With Dr. Conklin's inspiring story of the first half-century of our society fresh in our minds, it is not unnatural for us naturalists to ponder over phases of the probable future of biological science, as its future may be tentatively foreseen from recent thought trends in this field, and it is to some phases of the newer trends that I wish to ask your attention.

For the last decade or two one notable growth

¹ Presidential address presented before the American Society of Naturalists, at its Boston meeting, December 30, 1933.

change in biological view-point has been a rapid increase of interest in processes and products of living things, as these may be studied and compared in an increasingly quantitative way. Observations become progressively more comparative, and more quantitatively so. Superficial description must, of course, precede everything else, but comparison calls for increased precision of factual knowledge and consequently observation has become, and is becoming, continually more precise and more laborious. This kind of progress is seen partly in the introduction of new characteristics or dimensions, according to which things may be more satisfactorily compared, and partly through improved methods of observation and mensuration. Our language is expanding, with added words and phrases calculated to facilitate precise notation, but such additions hardly keep pace with the recent rapid advance of thought, and some new concepts are widely accepted without adequate ter-

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