experience of teachers with vision and imagination should be of great assistance.

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AMERICAN BOTANY, 1886–1932, AS SHOWN IN THE BOTANICAL GAZETTE

A LIST of the principal articles published in the *Botanical Gazette* during the ten years 1886–1895 and a like list of articles for the decade 1923–1932 has just been compiled under my direction by Miss Lillian Bondurant, a graduate student. Titles have been classified in accordance with the scheme used by *Biological Abstracts,* but to save space in the tabular summary which I have made the subdivisions of physiology and systematic botany have been omitted. The average length of principal articles in the earlier period was about seven to nine pages and there were many short notes of less than a page, while the papers in more recent times are nearly twice as long. The pages of the ten volumes of the earlier period are 3,976, while the number in the last ten years is 8,866. Contributions in the recent period in every field, unless it be taxonomy, are of a far more technical nature than those in the early days of the *Gazette.*

TABLE I

NUMBER OF PRINCIPAL ARTICLES IN THE BOTANICAL GAZETTE FOR TWO TEN-YEAR PERIODS, CLASSIFIED BY SUBJECTS

Subjects	1886–1895	1923–1932
Botany, general with also methods and apparatus	26	5
Bacteriology and immunology	10	10
Cytology	14	46
Ecology, including "natural history"	53	38
Evolution	4	0
Genetics	1	25
Morphology and anatomy of vascular plants	45	100
Paleobotany	4	17
Physiology, in all its branches	33	176
Phytopathology	16	21
Systematic botany, including morphology of the lower plants	176	82
	382	520

The nature of articles in certain fields has changed greatly; the early papers tabulated under ecology were more properly "natural history" and would hardly be recognized as belonging to ecology; the lone article recorded as genetics belongs better as evolution. A great increase has occurred in plant physiology, and many of its present subdivisions were almost if not entirely untreated forty years ago—as light relations, chemical relations, mineral nutrients, enzymes.

The changes in the *Botanical Gazette* are, it is true, not an exact measure of change in botanical literature during the period. In recent years many special journals have come into being dealing with particular branches of botanical science. These furnish an outlet for articles which formerly would have been offered to the *Botanical Gazette.* Yet the magazine continues to receive now, as it accepted in the past, contributions in all fields of botany, and it represents rather well, now as heretofore, the activities of American investigators.

It is interesting to read over the list of early contributors, among whom may be noted George F. Atkinson, Charles R. Barnes, Charles E. Bessey, John M. Coulter, W. R. Dudley, W. G. Farlow, George L. Goodale, Asa Gray, Byron D. Halsted, Theodor Holm, Conway MacMillan, Roland Thaxter and Lester F. Ward. It would be possible to make another interesting list of contributors of the earlier period who are still active in botanical investigation, but such a list would need to be a long one, if inclusive, while any selection of names might lead to invidious comparisons.

The compiled lists are typewritten, and when bound will be placed in the University of Colorado library, where they may be consulted.

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IN the issue of SCIENCE for September 22, 1933, there was printed an obituary notice on Albert Martin Bleile, signed "F. A. H." In the notice it was stated that in 1876 "there was but one laboratory of experimental physiology in the United States, that of the late Professor H. Newell Martin, which had recently been established at the Johns Hopkins University." May I call attention to the fact that when Dr. Henry P. Bowditch returned from Ludwig's laboratory in 1871 he established a laboratory of experimental physiology in the Harvard Medical School. The apparatus in the laboratory was brought over from Germany at his expense. During the years between 1871 and 1876 Bowditch himself published papers on the lymph spaces in the fasciae, on a new form of induction apparatus, and on the force of ciliary motion. He and the late Charles S. Minot completed and published a research on the influence of anesthetics on the vasomotor centers. The late Dr. J. Ott published two papers, one on the action of lobelina on the circulation, and another on the physiological action of thebain. Experiments on the effect of bile in promoting the absorption of fat and observations