

On any date the roll of the association consists of four categories: (a) endowment members (including sustaining members and life members), (b) paid-up annual members, (c) annual members in arrears for one year or less and (d) annual members in arrears for from one to two years. Names of annual members are retained on the roll till arrearage amounts to two years, but the journal subscription that goes with membership is not available. Annual dues are due October 1 and on that date all those enrolled whose arrearage amounts to two years are considered as having automatically resigned. There is therefore a difference between total paid-up membership and total enrolment. On September 30, 1929, enrolment in each of the four categories was as follows:

Endowment members .....	458
Paid-up annual members .....	17,062
Total paid-up membership .....	17,520
In arrears for one year .....	615
In arrears for two years .....	327
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Total enrolment .....	18,462

Only 327 automatic resignations had to be recorded on October 1, 1929. In the year closing September 30 there had been 322 actual resignations and 187 deaths. On September 30 the total paid-up membership was 94.9 per cent. of the total enrolment. The number of new members and reinstatements for the year 1928-29 is 2,992, which is 16.2 per cent. of the total enrolment at the end of the year. For the same period the total loss in membership (including deaths, actual resignations and automatic resignations, the latter recorded October 1, 1928) is 858,

which is only 4.6 per cent. of the total enrolment at the end of the year. The net gain in total enrolment for the year from September 30, 1928, to September 30, 1929, is 2,134.

Records of this sort have been kept since 1920, and it is interesting to compare the percentages given above with the corresponding values for preceding years. The value 94.9 is the highest yet recorded in its series, the next lower one being 94.5 per cent. for the year 1927-28. The same is true of the value 16.2, the next lower percentage in that series being 14.5, for 1923-24. The total loss in membership was 4.6 per cent. of the total enrolment at the end of the year for 1925-26 as well as for the year here considered, this value being the lowest in its series; the next higher value in that series is 4.9 per cent., for 1924-25. Data for paid-up membership and total enrolment for September 30 of each year from 1920 to 1928, inclusive, are shown and graphed in the new volume of Summarized Proceedings of the American Association, which was published October 15, 1929, and the same graphs are shown in the booklet on "The Organization and Work of the American Association." Copies of the booklet may be secured from the permanent secretary's office on request and the new volume of proceedings may be purchased from that office.

The recent rapid increase in the membership of the association reflects the correspondingly rapid growth of public interest in the advancement of science in America. There seems to be no reason to doubt that the association will continue to grow in a similar manner.

BURTON E. LIVINGSTON,  
Permanent Secretary

## OBITUARY

### HORACE BUSHNELL PATTON

HORACE BUSHNELL PATTON, PH.D., professor emeritus of the Colorado School of Mines, died at Atascadero on July 15, 1929, after an illness resulting from an operation for appendicitis. He was born in 1857, graduated from Amherst in 1881 and after a couple of years at Howard University, of which his father, Rev. W. W. Patton, was for many years president, he went to Europe. He studied geology (and especially petrography) first at Leipzig under Zirkel, then at Heidelberg in Rosenbusch's laboratory, where I first met him and had the pleasure of field excursions with him, not always geological, I remember. He took his degree *summa cum laude* in 1887 and remained as Rosenbusch's assistant for a short time. A short paper<sup>1</sup> in German on the minerals of a diorite

crystallizing out into a miarolitic cavity which might well be called to the attention of certain recent writers and his thesis<sup>2</sup> on the origin of the Marienbad serpentine from a peridotite, not then a hackneyed subject, were the fruit of his German stay. Returning to America in 1888, after brief teaching appointments at Howard University and Rutgers, 1889, he was again associated with Dr. L. L. Hubbard and myself in more congenial work, combining research and teaching for the Michigan Geological Survey and Mining School at Houghton. His research here was largely petrographic and was to have been correlated with work by Dr. Wadsworth, which the latter's resignation as state geologist upset. However, there are a few pages signed by him in Wadsworth's 1892-93 report. Dr. Patton then accepted a call to the Colorado

<sup>1</sup> "Hornblende, Oligoklas und Titanit aus Drusenräumen im Schriesheimer Diorit" (Separat-Abdruck aus dem Neuen Jahrbuch für Mineralogie, etc. 1887. Bd. 1)

<sup>2</sup> "Die Serpentin- und Amphibolgesteine nördlich von Marienbad in Böhmen." Wien 1887. Alfred Holder, K. K. Hof- und Universitäts-Buchhändler.

School of Mines and remained there nearly a quarter century, from 1893 to 1917. For a time he was acting president. While there he prepared a number of papers for the Colorado Scientific Society and Geological Survey on minerals such as topaz, opal, tourmaline and the zeolites of Table Mountain and a number of mining districts.<sup>3</sup>

Perhaps the most widely interesting of his papers, however, are those before the Geological Society of America, one showing that the "rock streams" previously supposed to be glacial were not such but a result of slow creep, and the working up of Crater Lake with Diller. After he ceased to teach, he continued in geological private practice, at first for the Union Pacific.

Of a family prominent in affairs of the church, as his very name shows Christian and not narrow, he was true to the family tradition. Wherever he went he helped in the church, not only with his fine bass voice in the choir, but financially as well. I remember the internal chuckle I gave when we were in Houghton and a pastor was congratulating himself to me on the handsome increase in the foreign missionary collection of his church. I knew that the increase was due solely to Patton, who had recently arrived, but I did not disturb his complacency. Patton's religious attitude was not merely of voice and pocketbook. It represented inward conviction as came out in conversations when tramping as German fellow students. Those were the happy days of Henry Drummond and Charles Kingsley, when we had not heard of fundamentalism and saw no difficulty in being both evolutionist and evangelical.

ALFRED C. LANE

TUFTS COLLEGE

### MEMORIALS

THE Illinois State Board of Natural Resources and Conservation has passed the following minute and directed that a copy be forwarded to Professor Rollin T. Chamberlin:

For thirteen years, during the period when the present Geological Survey of Illinois was being organized and its policies in process of formulation, the late Professor Thomas Crowder Chamberlin served as its geologic ad-

<sup>3</sup> "Tourmaline and Tourmaline Schists from Belcher Hill, Colo.," *Bulletin, Geol. Soc. of Am.*, vol. 10, pp. 21-26; "Thomasonite, Mesolite, and Chabazite from Golden, Colo.," *Bulletin, Geol. Soc. of Am.*, vol. 11, pp. 461-474; "Concretions of Chalcedony and Opal in Obsidian and Rhyolite in Colo.; Some Minerals Recently Received by the Colorado School of Mines," *Quarterly of the Colorado School of Mines*, Oct., 1907; "Topaz-Bearing Rhyolite of the Thomas Range, Utah," *Bulletin, Geol. Soc. of Am.*, vol. 19, pp. 177-192; "Rock Streams of Veta Peak, Colorado," *Bulletin, Geol. Soc. of Am.*, vol. 21, pp. 663-676; "The Montezuma Mining District of Summit County, Colorado; The Grayback Mining District," *Colorado State Geological Survey, Bulletin* 24.

viser. At the height of a distinguished career crowded with many and varied duties, he gave generously of his time and rich experience to the inauguration of the survey's work along broad, sane and useful lines. This board desires to record herewith its appreciation of the splendid quality of the public services so given and its gratitude for many years of association with one who is universally recognized as the leader in his field in America.

The following resolution regarding the late Dr. William H. Carmalt was voted at a recent meeting of the Directors of the New Haven General Hospital Society:

*Voted*, to record the sorrow of the Directors of the General Hospital Society of Connecticut at the death of William Henry Carmalt, M.D., M.A., LL.D., for five years (1918-1923) president of the society; for over fifty years (1876-1929) actively interested in promoting the welfare of the society and of the school of medicine, Yale University, where he taught from 1876 to 1907. Distinguished exponent of his profession, he was an original member of the American Ophthalmological Society, a member of the Congress of American Physicians and Surgeons, and an honorary Fellow of the American College of Surgeons. His ability and distinction were fittingly recognized alike through his election by his colleagues as president of the Connecticut State Medical Society and of the American Surgical Association, and by the honorary degrees conferred upon him by Yale University. Beloved in the community of New Haven, he was equally loved and honored in the commonwealth of Connecticut, and far beyond its borders in distant states and cities where his former students carried with them a feeling of deep affection for him as a man, a high regard for him as a teacher and practitioner. Not in words can the Directors of the General Hospital Society of Connecticut adequately express their esteem for him nor their sense of loss at his death.

### RECENT DEATHS

THE death in Paris is announced of Dr. Harry Taylor Marshall, since 1908 Walter Reed professor of pathology and bacteriology in the University of Virginia, at the age of fifty-four years.

DR. EDWARD N. LIBBY, professor of the theory and practice of medicine, dean of Tufts College Medical School, died on November 5 at the age of sixty-one years.

WILLIAM R. HART, formerly a member of the faculty of the Massachusetts Agricultural College and the first to organize a department for training teachers of agriculture, has died at the age of seventy-six years.

R. WILFRED BALCOM, chemist in charge of food control of the Food, Drug and Insecticide Administration of the U. S. Department of Agriculture, died suddenly on October 17.

DR. THOMAS BARLOW WOOD, Drapers professor of