output of catalase from this organ with resulting decrease in oxidation. In fact it is probable that the cause of anesthesia is to be found in the decrease in the oxidative processes particularly of the nervous system produced presumably by the destruction of the catalase by the anesthetic. The specific action of anesthetics on the nervous system, according to this hypothesis, is due to the greater solubility of the lipoids or fat-like substances of nervous tissue which facilitates the entrance of the narcotic into the nerve cell and thus exposes the contained catalase more directly to the destructive action of the drug.

W. E. Burge

Physiological Laboratory of the University of Illinois

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS

The formal organization meeting of the American Association of Variable Star Observers was held at the Harvard College Observatory, Cambridge, Mass., on November 10th and was attended by 25 or more members, almost all of whom are active participants in the observation of variable stars. The meeting was called to order by Wm. Tyler Olcott, who for the past six years has acted as secretary of the informal association, and A. B. Burbeck was appointed temporary chairman. A carefully drawn up constitution was read and accepted and then the officers and council members of the association were duly elected. D. B. Pickering, of East Orange, N. J., was elected president; H. C. Bancroft, Jr., of West Collingswood, N. J., vice-president; W. T. Olcott, of Norwich, Conn., secretary, and A. B. Burbeck, of North Abington, Mass., treasurer. The four members of the council are Professor Anne S. Young, of Mt. Holyoke College Observatory, J. J. Crane, of Sandwich, Mass., for two years, and Miss H. M. Swartz, of South Norwalk, Conn., and C. Y. McAteer, of Pittsburgh, Pa., for one year.

While waiting for the result of the election to be announced by the tellers, a general discussion of the most suitable size of telescope for the use of the observers was opened up, and later, a discussion of plans for the most systematic observation of the 300 or more variable stars under research was also freely indulged in.

In taking the chair as the first president of the association, Mr. Pickering reviewed, in a few words, the past achievements of the Variable Star Observers, and mentioned their aims for the future.

Tea was kindly served by the director of the observatory in the afternoon, and then lantern slide exhibits were given, one by Miss A. J. Cannon, showing some of the celestial wonders as revealed in the photographic telescopes, and another by Mr. Leon Campbell, illustrating the progress of the study of the star SS Cygni and what attempts are being made to fathom its seemingly irregular variations, both in light and period.

While an inspection of the work of the observatory was being made, the more experienced members observed this same SS Cygni in the comfortable 12-inch Polar Telescope, all under like conditions, and the result of the estimates of the 17 observers was that the star was then of the magnitude 11.21, with a probable error of 0.12 magnitude.

At a short meeting of the council, three noted variable star observers were elected to honorary membership, Professor E. C. Pickering, director of the Harvard Observatory; Rev. J. G. Hagen, director of the Vatican Observatory, Rome, and Professor J. A. Parkhurst, of the Yerkes Observatory. Professor Pickering was also elected as the first patron of the association.

The council also elected nine members to life membership and the total membership therefore numbers 84, of which 72 are active; 9, life, and 3 are honorary members, with 1 patron.

A sumptuous banquet was served in Boston that evening at which 20 members and four guests were present. Interesting after dinner speeches were made by Professors Pickering and Bailey, and Miss Cannon and Mr. Olcott, Mr. Campbell acting as toastmaster.

The meeting was considered the climax of all those yet held and marks the successful launching of a full-fledged association in America for the regular observation of variable stars by a group of amateur and professional astronomers, which has been doing excellent work along this line for some years past, and which bids fair to be even more useful to science in the near future.

Several committees were appointed by the president to consider the matter of telescopes, charts and schemes of work, and it was voted by the council to hold the spring meeting at East Orange, N. J., on May 6, 1918, at the invitation of President Pickering.

For those members who remained in Boston until the next day, an excursion was arranged to

visit the Blue Hill Meteorological Observatory, where Professor McAdie was most attentive and explained in detail the investigations he is carrying on there.

The opportunity for interested parties to enroll themselves as charter members remains open until December 31, 1917, and all such persons are invited to join the association, to whom copies of the constitution will be sent upon application to the secretary, Wm. Tyler Olcott, 62 Church Street, Norwich, Conn. L. C.

BOSTON MEETING OF THE AMERICAN CHEMICAL SOCIETY. IV

DIVISION OF PHYSICAL AND INORGANIC CHEMISTRY

H. P. Talbot, *Chairman*

E. B. Millard, *Secretary*

Joint Meeting with Division of Organic Chemistry, Wednesday Morning

1. *Two new laboratory instruments:* ARTHUR JOHN HOPKINS.

(*a*) A buret-micrometer.

A reading device which permits of correct readings to .001 c.c.

(*b*) A balance for first-year students.

A three-arm balance with non-removable riders in a glass and aluminum case. A distinctive arrest. The bearings are of stellite and the arms of invar tape. The ratio of the arms is such that the weight used is to the load as 4: 1.

2. *Water-lag in a buret:* ARTHUR JOHN HOPKINS.

A study of the amount of pure water clinging to the sides of a buret, under different speeds of discharge. The rule is deduced that, in order that comparable readings may be obtained, the discharge should not be faster than 12 to 15 seconds per cubic centimeter.

Limits of individuality in chemistry: N. T. BACON. The chances for variation become less and less as complexity of structure is reduced, but now that we recognize atoms as being composed of many parts is it not proper to recognize that at least the individual molecule, if not the atom itself, may have an individuality? Probably each atom would have a normal arrangement of the multiplicity of parts going to build up the atom, but the question is raised whether it is not probable that owing to imperfect elasticity these frequently stand out of the normal position with reference to each other and reducing their tendency to combine so that frequently many times as many collisions are necessary before completion of combination as would be called for by theory.

A new hydrate of lime: H. W. CHARLTON. This hydrate of lime possesses marked plasticity, and differs from the ordinary $CaO \cdot H_2O$ in containing a considerably less amount of water. Its method of formation precludes the possibility of its being a mixture of CaO and $CaO \cdot H_2O$. One example of its formation comprises digesting $CaO \cdot H_2O$ with ten times its weight of water at 225 pounds pressure for a couple of hours. The resulting plastic material contains but slightly more than 15 per cent. water of combination while it originally contained over 24 per cent. and its specific gravity is but 1.95, while that of $CaO \cdot H_2O$ is about 2.078. This is remarkable as it would naturally be supposed that the specific gravity would lie some place between that of CaO.–3.25 and that of CaO.–2.078.

An investigation of the reaction between antimony and the solutions of sodium in liquid ammonia: EDWARD B. PECK. Solutions of sodium in liquid ammonia of concentrations from 0.0049 to 1.2482 gm. atoms of sodium per liter of liquid ammonia were sealed in glass bombs with an excess of antimony and allowed to react at room temperature for from two months to a year. A dark-brown, slightly soluble compound first formed, after which a dark-red solution appeared and the precipitate dissolved. The ratio of antimony to sodium in the solution does not correspond to a small integral number and changed with the concentration of sodium. The ratio Sb/Na changed very rapidly in dilute solutions from a value of $Sb/Na = 1.98$ to a maximum of $Sb/Na = 2.333$ at a sodium concentration of about 0.4N, after which there was a slight decrease to a value of $Sb/Na = 2.254$ at a concentration of 1.248. Two plots of the results were shown, one the ratio Sb/Na against the concentration of sodium, and another the log. of the sodium concentration against the ratio Sb/Na. In both these plots the results lay on a smooth curve. The apparatus for carrying out this work was described in detail. Weighed amounts of sodium were put up in small glass capsules. These capsules were placed across a tube provided with an electromagnetic hammer in the inside, which could be actuated by a solenoid outside. The reaction tube containing metallic antimony was sealed on to this tube. The tube was also connected to a supply of pure ammonia and to a vacuum pump. After evacuating the apparatus, ammonia was condensed in the reaction tube by surrounding it with a bath of liquid ammonia. The sodium was