SOCIETIES AND ACADEMIES

THE AMERICAN CHEMICAL SOCIETY—NEW YORK SECTION

THE second regular meeting of the session of 1906–7 was held at the Chemists' Club, 108 West 55th Street, on November 8.

The following resolutions respecting the proper interpretation of the measures enacted in the federal pure food and drug law were adopted:

WHEREAS: The Food and Drugs Act of June 30, 1906, is generally approved, and in the opinion of the New York Section of the American Chemical Society it is one of the most important measures which has been taken for the protection of the public; and

WHEREAS, on the other hand, we can not but feel that the rules and regulations published from time to time by the Department of Agriculture, for carrying out the provisions of this act are not in full accord with the knowledge and experience of some of the members of this section, who are experts in these matters, and inasmuch as there is a conscientious difference of opinion concerning the same, therefore be it

Resolved, That we respectfully request the honorable Secretaries of Agriculture, the Treasury and Commerce and Labor, who are given the authority to administer this law, to suspend the publication of these decisions temporarily, and before taking further steps in this direction to consult with a carefully-selected committee of experienced chemical manufacturers and scientists, recognized as authorities in these fields.

The following papers were read:

The Atomic Weight of Chlorine: W. A. NOYES and H. C. P. WEBER.

The Effect of Coal Gas on the Corrosion of Wrought-iron Pipe buried in the Earth: W. L. DUDLEY.

This investigation was undertaken in connection with a study of the conditions causing the corrosion of pipe laid under the streets of Nashville.

Five samples of earth were collected as representative of the various types of earth in which the pipes are laid. The samples were analyzed for chlorin, nitrogen as nitrates, nitrites and ammonia, alkalinity and humus. Each sample was put in a separate wooden box. Five pieces of wrought-iron pipe were cleaned by immersing in a warm ammoniacal solution of ammonium citrate, washed in water, dried and weighed. Each piece was tightly plugged at one end and thrust into a box of earth. The pipes were left in contact with the earth for twelve months, during which time water was occasionally added in equal amount to each box. At the end of this time the pipes were removed, cleaned as before and weighed. A similar set of boxes and pipes were left for twelve months, during which time one half cubic foot of coal gas was admitted to each box daily. Each box of this set was moistened daily with 50 c.c. of water, the boxes being covered with canvas to prevent evaporation.

The loss of weight of the set of pipes in contact with coal gas was found to be about one half as great as in the case of the pipes immersed in the earth alone. In both cases the loss was greater in the earth containing the greater chlorine content.

Chemical Examination of Micromeria Chamissonis (Yerba Buena): F. B. POWERS and A. H. SALWAY.

When the entire air-dried plant was distilled with steam, 0.16 per cent. essential oil and a little palmitic acid passed over. The oil had a mint-like odor, sp.g. 0.9244 at 20°, $[\alpha]_D = -22° 48'$.

The concentrated alcoholic extract of the plant, a thick, green oil, was distilled with steam. The distillate contained traces of formic, acetic and butyric acids and an essential oil: B.P.$_{25}$ 80–160°, sp.g. = 0.9450 at 20°, $[\alpha]_D = -26° 44'$. The residue in the still separated into a red aqueous liquid and a soft resin. From the aqueous liquid were obtained a new alcohol, *xanthomicrol*, $C_{15}H_{12}O_6$, yellow needles, m. 225°, with phenolic properties, and i-glucose. A petrol-ether extract of the resin gave a paraffine $C_{31}H_{64}$, a phytosterol $C_{27}H_{46}O$ and behenic, arachidic and palmitic acids. From the ether extract of the resin two new alcohols, *micromerol* $C_{33}H_{56}O_6$ and *micromeritol* $C_{30}H_{50}O_6$, were isolated. Micromerol, m. 277°, very stable, occurs to the extent of 0.25 per cent. of the plant. It forms a

monoacetyl and a monomethyl derivative, and is physiologically inactive. Micromeritol, m. 294–296°, gives a diacetyl and a monoacetyl derivative.

C. M. Joyce,
Secretary

THE TORREY BOTANICAL CLUB

The meeting of October 30, 1907, was held in the Museum Building of the New York Botanical Garden. The club was called to order by the secretary at 3:55 o'clock P.M., and Dr. John Hendley Barnhart was elected chairman. Twenty-two persons attended.

The following program was presented:

Botanical Exploration in Jamaica: N. L. Britton.

Dr. Britton described his recent trip to the island of Jamaica, where he spent the month of September, with Mrs. Britton, and in cooperation with Hon. William Fawcett, director of public gardens and plantations, and of Mr. William Harris, superintendent of public gardens, in exploring the south-central portion of Jamaica. Collections aggregating about one thousand field numbers were made in the vicinity of Kingston, in the vicinity of Mandeville, on the Santa Cruz Mountains and the Pedro plains, lying between these mountains and the southern coast; the coast and morasses about Black River and Lacovia were examined, and another base was made at New Market on the western border of the parish of St. Elizabeth, whence the hill country of the vicinity and of Eastern Westmoreland were explored; a stop was also made at Bluefields on the southern coast.

The region explored had been little collected in since the visit of William Purdie, an English collector sent to Jamaica from the Royal Gardens, Kew, in 1843 and 1844, and many species not collected by Mr. Harris in his recent work were obtained. Specimens of a considerable number of the more interesting trees and shrubs obtained were exhibited.

Remarks on the water-weed, Philotria: P. A. Rydberg.

The genus was first described in Michaux's Flora Boreali-Americana under the name Elodea. Unfortunately this is antedated by *Elodes* Adanson. *Elodea* is characterized as having hermaphrodite flowers with three stamens and three bifid styles. Muhlenberg in his catalogue referred the plant to the Old World *Serpicula verticillata* L., now *Hydrilla verticillata,* and characterized the plant as being diœcious with four-merous staminate flowers. Pursh in his "Flora" retains the plant in *Serpicula,* but publishes it under a new specific name, *S. occidentalis.* His description agrees in every respect with that of Michaux except that the leaves are described as linear, acute, and finely serrulate. Rafinesque, in reviewing Pursh's "Flora" in the *American Monthly Magazine* criticized Pursh's treatment of the plant and proposes a new name *Philotria,* under which the plant is now to be known. Nuttall in his genera proposes another new name *Udora,* and cites *Elodea* Michx. as a synonym; but describes the plant as being diœcious, the staminate flowers as having nine stamens and the pistillate as having three sterile filaments and three ligulate bifid stigmas. He also adds: "flowers very small and evanescent, the female emerging; the male migratory, breaking off connection usually with the parent plant, it instantly expands to the light, the anthers also burst with elasticity and the granular pollen vaguely floats upon the surface of the water." Torrey, in the "Flora of New York," describes *Udora* as being polygamous; the sterile flowers with nine stamens, the fertile ones with three–six stamens and cuneiform, two-lobed stigmas.

How are these conflicting descriptions to be reconciled? Have some of the authors mentioned given erroneous descriptions? Are there more than one species which have been confused, or is *Philotria canadensis* such a variable plant both as to flowers and leaves? If there are more than one species, are they all polygamo-diœcious with three kinds of flowers: staminate with very short perianth-tube and nine stamens, pistillate ones with long tube and no stamens or merely rudimentary filaments, and hermaphrodite flowers similar to the pistillate ones, but somewhat larger and with three–six stamens? These are questions to be answered, and botanists who have an opportunity to study the plants are invited to

make thorough field study on these interesting water-weeds.

The study, as far as it has been done now, has given the following suggestions and conclusions, mostly drawn from the literature on the subject and from herbarium material. There seem to be more than one species, probably six or seven. As far as the material on hand shows, the plant with broad and obtuse leaves, originally described as *Elodea canadensis*, seems to be hermaphrodite; the others all dicœcious, not polygamous. The plant which is growing in Europe, supposed to have been introduced from America, and described as *Anacharis Alsinastrum* Babington, resembles *E. canadensis* in habit, but only pistillate flowers have been found, and in these the stigmas are entire. In the North American forms with dicœcious flowers the staminate sheaths are sessile in the axils of the leaves, and easily overlooked, except in the plant common in the Rocky Mountain region and one specimen from Tennessee, in which the sheaths are peduncled. In the Rocky Mountain plant the staminate flowers are apetalous.

The subject will be more fully discussed in a paper which Dr. Rydberg is preparing to publish in the *Bulletin* of the club, as soon as more material has been consulted and certain questions can be answered with more definiteness.

Both papers were briefly discussed and adjournment was at 5:30 o'clock.

C. STUART GAGER,
Secretary

THE SCIENCE CLUB OF THE UNIVERSITY OF WISCONSIN

THE first regular meeting of the club was held in Science Hall on Tuesday, November 5. Dr. Thos. E. Will, secretary of the American Forestry Association, delivered an address on the general subject of forest preservation, with particular emphasis on the proposed forest reserves in the Appalachian and White Mountains. After pointing out the fact that the timber supply of the United States is disappearing at an alarmingly rapid rate, Dr. Will showed by a series of significant lantern slides the disastrous indirect effects which the removal of the forest-cover produces upon cultivated valleys and slopes, and explained the direct relation between deforestation and the increase in floods. The contrast between western United States, with its large area of forest reserves, and the eastern portion of the country, which has none at all, was clearly brought out by maps thrown on the screen; and the importance of immediately providing such reserves in the eastern mountains for the protection of the streams which rise among them, was made clear to all. At the close of the lecture a resolution was adopted by the club urging congress to enact a law providing the necessary reserves.

ELIOT BLACKWELDER,
Secretary

DISCUSSION AND CORRESPONDENCE

THE EQUATION FOR ONE KILOGRAM OF AIR

TO THE EDITOR OF SCIENCE: It is possible that many teachers of thermodynamics may not have noticed that the characteristic equation for one kilogram of air takes the easily rememberable form $pv = T/10$ when p is measured in standard atmospheres, v in cubic feet, and T in thermodynamic Centigrade degrees, the accuracy of the even integer being fully as great as that of the gas law itself. These units are, of course, a curious mixture of the English and continental systems, but this seldom makes much difference in actual problems, and the convenience of the formula for rough mental computations is sometimes very great.

The data upon which this computation of the gas constant is based are the statements in the third (1905) edition of Landolt and Boernstein that one liter of air under standard conditions weighs 1.2928 grams, and that an American yard is 0.91440 meters, and the value $T_0 = 273.13°$ given by Buckingham in the *Bulletin* of the Bureau of Standards for May, 1907. The value $R = 0.1$ is consistent with these assumptions within less than one fiftieth of one per cent.

The corresponding values of C_p and C_v, reduced from the mean of the results of Regnault (1862), Wiedemann (1876) and