

Some Notes on the Determination of Crude Fiber. J. M. PICKEL, Department of Agriculture, Raleigh, N. C.

A Method for the Extraction of Salicylic and Benzoic Acids and Saccharine in Food Products. W. M. ALLEN, Department of Agriculture, Raleigh, N. C.

On Biot's Formula for Vapor Pressure. J. E. MILLS, University of North Carolina, Chapel Hill, N. C.

It was shown that Biot's formula for the vapor pressure of a liquid,

$$\log P = A + bd^4 + cB^t,$$

does not exactly represent the true vapor pressure of a liquid in the immediate neighborhood of the critical temperature. The article is not suitable for abstraction and will shortly be published in full.

Note on the Law of Dulong and Petit. J. E. MILLS. University of North Carolina, Chapel Hill, N. C.

Collected data for the specific heats of the metals were exhibited in the form of curves. The results show that the law of Dulong and Petit in its present form has but slight basis in fact.

On the Chemical Combination of Hydrogen and Oxygen when Subjected to the Action of Radium Radiations. CHARLES W. EDWARDS, Trinity College, Durham, N. C.

I desire to announce to the North Carolina Section of the American Chemical Society the discovery of the synthetic action of radium radiations in its chemical effects. Numerous effects have been observed and published wherein compounds have been decomposed into elements or transformed into simpler compounds. For instance, radium bromide dissolved in water produces H and O, it produces ozone in the air, and helium is produced by the radium emanation.

Certain investigations of a negative result carried out last year in England concerning the effect of ionization by ultra-violet light on gaseous mixtures led me to attempt the same problem, using radium as the ionizing agent. This I was able to do, thanks to the kindness of Dr. Bergen Davis and Dr. C. B.

Pegram, of Columbia University, and of the department of physics in various ways, especially in the loan of five milligrams of pure radium bromide worth at present about \$350.

The amount of chemical combination was measured by the change in volume of the gas exposed to the radiations. The saturation current was measured by the electrometer method and the following data are based on those measurements. I am now taking the current by a ballistic method and measuring volumes more accurately, so will soon have more accurate results. I will reserve the details for a later paper, but will state now a few results.

The quantity of gas converted to water was 18×10^7 c.c. per second. In one cubic centimeter there are 4×10^{19} molecules, hence the number of molecules of gas that disappeared was

$$n = 4 \times 10^{19} \times 18 \times 10^{-7} = 7.2 \times 10^{13} \text{ per sec.}$$

three molecules of the mixed gases. If M = number of molecules of water formed per second

$$M = \frac{2}{3} \times 7.2 \times 10^{13} = 4.8 \times 10^{13}.$$

If N = number of physical ions produced, then in this case $N = 7.32 \times 10^9$.

Hence

$$\frac{M}{N} = \frac{4.8 \times 10^{13}}{7.32 \times 10^9} = 6.500.$$

From this it appears that 6,500 molecules of water were formed for each ion produced by the radium radiations—a result far in excess of expectations or theoretical predictions.

After the program the visiting chemists were the guests of the resident chemists at a table d'hôte dinner at Giersch's café.

C. D. HARRIS,
Secretary.

SCIENCE CLUB OF THE UNIVERSITY OF MISSISSIPPI.

THE first meeting of the Science Club of the University of Mississippi for the current session was held September 30, Professor J. W. Johnson presenting a paper on 'The Teaching of Physics.'

At the October meeting Professor R. W.

Jones led in a discussion of the subject, 'The Training of Chemists,' reviewing a recent paper by Sir William Ramsay.

Dr. P. W. Rowland followed with a statement of his views on the treatment of the opium habit. According to his theory something is manufactured in the fluids of the body of an opium eater which acts as an antitoxin—something positive is developed which counteracts or antagonizes the morphine. These opposing forces approximate a condition of equilibrium, thus enabling the victim to take ever-increasing doses. This partial equilibrium is lost when the morphine is withheld. It was considered possible to produce an antitoxin, and it was suggested that the club undertake an investigation to this end. Dr. Rowland thought that some lower animal, say the horse, could be rendered immune to poisonous doses of opium or morphia by repeated injections of the substance, and that the serum thus obtained would probably contain the antitoxin in the case of the habitué of morphine or opium.

The next meeting of the club was held December 2. Dr. J. B. Bullitt, the leader for the evening, after some introductory remarks on immunity to drug influences, addressed himself more particularly to the closely allied subject 'Immunity from Disease.' Attention was called to the fact that the lower animals are immune to certain diseases to which the human race is subject, and *vice versa*. It was also noted that some divisions of the race enjoy immunity where others show peculiar susceptibility. Natural and artificial immunity were discussed. The history of the various theories of immunity, with a brief statement of each, was given, and special emphasis was laid on the 'side-chain' theory.

ALFRED HUME,
Secretary.

DISCUSSION AND CORRESPONDENCE.

AN EXAMPLE IN NOMENCLATURE.

MR. DAVID WHITE has published in the 'Smithsonian Miscellaneous Collections' (Quarterly Issue), Vol. XLVII., Pt. III., pp.

322-331, pl. xlvii, xlviii, a paper on 'The Seeds of *Aneimites*.' He shows that he has specimens of the foliage of that genus with seeds attached, also an abundance of detached seeds. He names the species bearing these seeds *Aneimites fertilis* n. sp. But he says that he discovered the seeds before he could be certain that they belonged to *Aneimites*, and had contemplated giving them the name *Wardia*, that he had even gone so far as to give them that name in a manuscript in preparation, but that he had postponed publication 'in the hope that further study * * * would yield * * * evidence bearing either on the internal organization of the fruits or on the structure of the fronds.' Such evidence he subsequently found and established to his satisfaction that the 'fruits' belong to the genus *Aneimites*, a supposed fossil fern, thus adding one more to the rapidly growing list of Paleozoic seed plants.

On page 323, where the species is described, he calls it "*Aneimites (Wardia) fertilis* n. sp., but in other places *Aneimites fertilis*. He, however, constantly refers to the seeds as *Wardia*, and in at least one place (p. 329) he calls them *Wardia fertilis*. He does not pretend that they belong to a different genus from *Aneimites fertilis*, and, indeed, proves that they are the same, and the specific name is the same for both combinations. What he has done is to take a name from an unpublished manuscript of his own and publish it for the first time as an exact synonym of the name that he gives to the species. The name *Wardia fertilis* is, therefore, stillborn, or at least strangled at its birth, and has no validity whatever.

Now why should he thus cumber an overburdened literature with another worthless synonym? Such a proceeding in the present state of science is a recognized crime. As Mr. Bather said in discussing a similar case some time ago, what does the scientific world care for his private excogitations over material too imperfect for publication?

But the name *Wardia* was preoccupied anyhow, for that name was given by Harvey and Hooker in 1836 to a genus of