sulphocyanides, giving the results of the investigations of Liebig, Lowig, Cahours, Medlock, Henry, Pelouze, Schmidt, Reimer and Upperkamp. The last work on the series was done twenty-one years ago.

Normal heptyl sulphocyanid is a colorless, mobile liquid, having a slightly alliaceous but rather pleasant odor and a specific gravity of 0.931 at 15 degrees C.

Dr. Austen exhibited an apparatus for lecture demonstration of the properties of the heavier gases.

WM. MCMURTRIE,
Secretary pro tem.

CHEMICAL SOCIETY OF WASHINGTON.

THE eighty-seventh regular meeting was held Thursday, March 12, 1896, with the President, Dr. de Schweinitz, in the chair. There were 35 members present, and Dr. Andrew Stewart was elected to membership. Mr. F. P. Dewey read a paper on 'The Refining of Lixivating Sulphides.' Dr. Dewey's paper reviewed the leaching process and the treatment of the sulphide precipitates produced. He described the sulphuric acid process of treating the sulphides, in which they are treated in strong sulphuric acid to convert the sulphides into sulphates, after which the charge is treated with water, the silver precipitated by copper and melted, and the copper sulphate crystallized.

Prof. H. W. Wiley and E. E. Ewell read a paper on 'The Determination of Lactose in Milks by Double Dilution and Polarization.' They called attention to the arbitrary correction proposed by Wiley in the determination of lactose in milk in a paper published in Vol. 6, page 289, of the *American Chemical Journal*. This arbitrary factor had been found too small, and the object of the present investigation was to eliminate it altogether, and to determine the degree of the correction to be made for the volume of the precipitate in each case by double dilution and polarization. The method was worked out carefully on whole milk, skimmed milk and cream, and it was found that the correction for the volume of the precipitate should be determined in each particular instance, as it varied from less than three cubic

centimeters in skim milk to more than seventeen cubic centimeters in cream for 100 cubic centimeter flask. Citations were given to other papers in which objection was made to the optical method of determining lactose by reason of the fact that a dextrinoid body was sometimes found in milk, but the danger of error arising from this source is not great.

Prof. H. Carrington Bolton read a paper on 'Berthelot's Contributions to the History of Chemistry.' He reviewed his 'Collection des Alchimistes Grecs' (Paris, 1887; 3 Vols. 4to), and his 'La Chimie au Moyen Age' (Paris, 1893; 3 Vols. 4to), showing their scope, analyzing their contents, and indicating the important changes in chemical history resulting from Berthelot's studies. He also described briefly the character of the Greek papyri of Leyden, as well as the Arabic, Syriac and early Latin manuscripts. The origin of alchemical ideas concerning the transmutation of metals is attributed by Berthelot to attempts of Egyptian goldsmiths to make alloys which fraudulently imitated the precious metals. The Latin works said to be translated from the Arabic of Geber are shown to be fictitious, yet genuine writings of Geber are extant. The technology of the writers of the third to the twelfth century is disclosed in the volumes received.

The topic of discussion for the evening was 'Style in Chemical Books and Papers.' Dr. Wiley opened the discussion and was followed by Prof. Bolton, Prof. Seaman, Prof. Clarke, Prof. Munroe, Mr. Fireman and Dr. de Schweinitz.

A. C. PEALE,
Secretary.

BIOLOGICAL SOCIETY OF WASHINGTON, 261ST MEETING, SATURDAY, MAY 2.

L. O. HOWARD exhibited a picture of three young ladies, triplets, giving statistics on the subject of triplets and stating that it was very rare for all three to reach maturity. Frederick V. Coville exhibited a ball $3\frac{1}{2}$ inches in diameter, taken from the intestine of a horse. It was of a light brown color and felt-like consistency and was composed of the barbed hairs of the crimson clover, *Trifolium incarnatum*. When over-ripe crimson clover hay is fed to

horses the hairs, which up to the time of flowering are soft and flexible, but afterwards become stiff and needle-like, gather into balls, sometimes becoming large enough, as in the present instance, to clog the intestine and cause death through peritonitis or some related ailment.

Erwin F. Smith exhibited a photograph made from a poured gelatine plate, showing the bactericidal effect of direct sunlight. He stated that many parasitic bacteria are killed by light and remarked on the hygienic importance of flooding sick rooms and all living rooms with sunshine. This experiment was made with *Bacillus tracheiphilus*, the exposure being only three hours. The part of the gelatine plate which was covered from the light developed from 6,000 to 12,000 small colonies in each field of the microscope, so that the gelatine became grayish white. The part of the plate which was exposed to the direct rays of the sun, a middle star-shaped portion, was easily distinguishable from the rest of the plate on the second day, and appeared throughout the experiment (8 days) to be entirely free from colonies, but a careful microscopic examination at several different times showed that about one bacillus in a thousand had escaped. These are supposed to have been partially or wholly protected from the direct action of the light by germs lying above them. With longer exposures or thinner sowings all would undoubtedly have been destroyed.

D. LeRoy Topping stated that Mr. Pollard and himself had found *Ranunculus ficaria*, at the original locality on Rock Creek, below Pierce's Mill, where it had first been noticed twelve years before.

A. F. Woods showed a tomato plant which had been exposed to hydro-cyanic acid. The stems, petioles and midribs of the leaves were killed by the gas, but the softer tissues were not injured and were able to obtain all the water they required through the dead tissue.

L. H. Dewey spoke of the tumbling mustard, *Sisymbrium altissimum*, stating that it had been introduced into North America from Europe during the past 20 years, and during the past 15 years it has developed into a very troublesome weed in Assiniboia and Manitoba, N. W.

Canada. It combines the productiveness and hardness of the mustard with the distributing habit of the tumbleweed and threatens to become a most dangerous weed in the northern plains where tumbleweed and mustard thrive at their best. Prof. James Fletcher, of Ottawa, Canada, carefully estimated the number of seeds borne by a single well developed tumbling mustard at 1,500,000. This plant has been reported from nine localities in Minnesota, Iowa, Missouri and South Dakota, and from ballast ground at Philadelphia, and freight yards at Weehawken, New Jersey.

T. W. Stanton presented a communication on the Genus *Remondia* Gabb, stating that this molluscan genus from the Lower Cretaceous of Arivechi, Sonora, Mexico, which has hitherto been placed in the *Trigonidæ*, belongs to the *Crassatellidæ* and includes the later described genus *Stearnsia* White, from the Cretaceous of Texas.

B. T. Galloway read a paper on *Recent Advances in our Knowledge of the Plant Cell* briefly reviewing the early discoveries and giving in some detail the most recent contributions to the subject. A paper by C. L. Pollard on the *Purple-Flowered Stemless Violets of the Atlantic Coast* was read, in the absence of Mr. Pollard, by David White. Seven species were enumerated in addition to the Linnaean *V. pedata*, the author stating that botanists have differed remarkably in their conceptions of specific relationships in this genus; yet while there is much individual variation, the species do not intergrade to the extent usually supposed. The *Viola dentata* of Birch, *V. septemloba* of Le Conte, and *V. ovata* of Nuttall, were restored to specific rank.

F. A. LUCAS,
Secretary.

GEOLOGICAL SOCIETY OF WASHINGTON.

At the 49th meeting, held on May 13th, papers were presented as follows:

The Faunal Relations of the Eocene and Upper Cretaceous on the Pacific Coast: By T. W. STANTON. The Chico-Tejon series has been described as a continuous series, showing a gradual transition both faunally and stratigraphically from the Cretaceous into the Eocene, the close faunal connection being

BIOLOGICAL SOCIETY OF WASHINGTON, 261ST MEETING, SATURDAY, MAY 2

F. A. LUCAS

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