CONFERENCE BULLETIN NO. 3—BIOGENESIS OF OIL OF PEPPERMINT.

Since the appearance of the second bulletin,* the following contributions have been received.

From Dr. C. Kleber, Passaic, N. J., have come two specimens of piperitone.

On February 2nd there were received from A. M. Todd & Co., 120 lbs. of forerunnings representing 12,000 lbs. of peppermint oil. We sincerely appreciate the efforts of Mr. N. R. Mueller, chemist for Todd & Co., who arranged to place this material at our disposal.

On February 26 we received from Dr. A. R. Penfold, F.C.S., Sidney, N. S. W., both purified and commercial samples of piperitone, and oil of *Eucalyptus dives*.

We feel greatly indebted to those who have so generously contributed to the progress of our researches.

At the conference of February 23, Dr. R. E. Kremers reported on the biochemical significance of experimental results recently obtained. Special attention is being given to the occurrence of isomeric menthenones in various oils. In the cohobated (water-soluble) oil of peppermint, a menthenone had been previously found which was identified with pulegone; semicarbazone m. p. 169–70°. A repetition of this work with the 1922 oil yielded a ketone whose semicarbazone melted at 215°. So far it has been impossible to differentiate it from piperitone semicarbazone, although its identity therewith is perhaps not fully established. The much larger amount of 1922 original oil is being examined by a somewhat different technique and the presence of a menthenone has been indicated. The arvensis mint oil investigated some time ago was at first thought to contain only pulegone, but a very careful fractionation of a large amount of semicarbazone revealed a second compound melting at 136–40° C. This agrees most nearly with the semicarbazone of menthene-4, one-3. Experiments are in progress to prepare the latter and thus prove the identity.

Taking into consideration the frequent occurrence of pulegone or its isomers in the Mentha species and the fact that an unsaturated ketone accompanied the menthone and menthol in peppermint oil, it seems likely that the latter are derived from the former. This supposition is supported by the fact that pulegone and menthol are the only compounds attaining a preponderant percentage. The former forms 80–90 per cent of *M. arvensis* var. *canadensis*, for example, and the latter 80 or more per cent. of the Japanese peppermint oil, said to be derived from an *arvensis* type.

* JOURNAL A. PH. A., March 1923, p. 285. See also December number, 1922, p. 1080.

BOOK REVIEWS.

Lehrbuch der Bakteriologie. Von Dr. Ludwig. Heim, Prof. und Direktor des hygienisch-bakteriologischen Instituts der Universität Erlangen. 6. und 7. neu bearbeitete und erweiterte Auflage. Mit 240 Abbildungen und 106 Lichtbildern auf 16 Tafeln. Lex. Octavo, 726 pp. $3.60.

This excellent text is divided into five chapters as follows:

I, General Methods; II, Determination of Bacteria; III, Bacteriological Diagnostic; IV, Microphotography; V, Bacteriological Laboratory.

An appendix brings the sixteen plates containing 106 microphotographs of different bacteria with full explanations. Prof. Heim's book is truly a masterwork!

Anleitung zum Studium der Chemischen Reaktionen und der qualitativen Analyse. Von Dr. Fr. Fichter, Prof. Univ. Basel. 3 Auflage. Octavo, 120 pp. 66 cents.

The two parts of this book treat the Qualitative Reactions of the most important cations and anions and Tables for Quantitative Analysis. The book is interleaved and is well suited for pharmaceutical students.

Qualitative Pharmazeutische Analyse. Eine Anleitung fur Studierende der Pharmazie und Apotheker. Von Dr. L. Rosenthaler, Prof. Univ. Bern. 41 Abbildungen. Octavo, 192 pp. $1.20.

The preface of the book begins with the following words: "The pharmacist should be able to recognize simple medicaments and to determine the chief constituents in mixtures." Truly a sign of the high standard in German-speaking countries from which we can take a lesson.

The author, Prof. Dr. Rosenthaler of the University of Bern, is well known in pharmacy, owing to his many valuable contributions to pharmaceutical literature. The methods employed are not only chemical but also micro-chemical and physical, as, f. i., flame test. The 41 illustrations show excellent photographs of crystals. The subject of micro-chemistry seems to gain in importance and deserves attention. The book is a "multum in parvo," a true qualitative pharmaceutical analysis which we can highly recommend to students and pharmacists. This book in the laboratory will be a quick and ready reference on many occasions.

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