

3rd group received the rachitic diet supplemented with 9.0 mg. cod liver oil daily for six consecutive days.

4th group received the rachitic diet supplemented with 11.0 mg. cod liver oil daily for six consecutive days.

5th group received the rachitic diet supplemented with 14.0 mg. cod liver oil daily for six consecutive days.

The experimental animals were kept in individual cages and a record was made of the daily food consumption of each animal.

All laboratories used the same cod liver oil for all vitamin D studies. The cod liver oil was diluted with a vitamin A and D free oil such as peanut oil or corn oil so that the total daily volume of oil consumed by each rat was 0.1 cc. The diluted oil was fed separate from the diet. The diluted oil was given for six consecutive days and the rates were then continued on the rachitic diet for four additional days. (Incidentally, various laboratories modified this procedure so that information was accumulated concerning the administration of oil for different periods.) Any animal that lost weight continuously; that ate less than two Gm. of food during two consecutive days; or that averaged to eat less than four Gm. per day was excluded from the test.

At the conclusion of the tenth day of the experimental period, the animals were killed and the femur and tibia bones (ulna and radius) were removed from the right leg and preserved in formaldehyde (10%) for examination. When ready for staining, the bones were thoroughly rinsed in water, split, placed in acetone for three minutes, dried on a blotter, placed in silver nitrate (2%) three minutes, intensified under bright light, placed in sodium thiosulphate solution (5%) for three minutes and examined under a microscope. The bones from another leg were preserved in formaldehyde for possible confirmation test.

VITAMIN D UNIT.

It was agreed that the vitamin D potency of cod liver oil should be expressed in units per Gm. The unit was defined as the minimum average daily amount of cod liver oil required to produce a continuous narrow line across the metaphysis of the leg bones in four out of six rats of each group prepared under the conditions specified in this assay.

The average daily dose was determined by taking one-tenth (number of days in experimental period) of the total amount of cod liver oil given.

The vitamin D content of cod liver oil was computed in terms of units per Gm. by dividing 1000 mg. (1 Gm.) by the determined minimum (in mg.) average daily corrective dose of oil.

THE FOURTH ANNUAL SYMPOSIUM OF THE GENUS MENTHA.

F. J. BACON, CHAIRMAN.*

The Fourth Annual-Symposium on the Genus *Mentha* was held May 8th at the Emerson Hotel, Baltimore. The Symposium is gaining more and more recognition in the scientific group. This year the attendance numbered about thirty men interested in the subject of mints. Representatives from all the mint-growing sections of the United States were present.

This Symposium was originated in 1927 at St. Louis for the purpose of studying at a round-table discussion all problems connected with the scientific, technical and trade aspects dealing with mints.

At the fourth meeting of the group the following papers were presented and discussed:

1. "Cytological and Genetical Studies on the Genus *Mentha*," by Mabel Louise Ruttle, Geneva Experiment Station, Geneva, New York. Eleven species of the genus *mentha* were collected in Germany and England and examined cytologically. The chromosome number of the pollen-mother-cell, egg-mother-cell and the root tips was determined. The results of the work will probably offer a scientific explanation of the confusing number of forms and types found in the mints.

2. "Another Question about Mints," by B. V. Christensen, University of Florida. A supposedly true type of *Mentha biperita* L. grown in the Florida medicinal plant garden in 1929 yielded

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an oil which assayed only 7.23% menthol. It was shown that this exceptional oil contained about 80% pulegone. It is hoped that further study will explain the low menthol content of peppermints grown in the South. It was pointed out that the plant may have undergone a dehybridization or a delayed reduction in the process of metabolism.

3. "Some Notes on Fertilizer Experiments," by G. A. Russell, Greensboro, North Carolina. Fertilizer experiments were undertaken to demonstrate the effect of various fertilizer combinations on the oil and menthol production. Forty-four plots were established in 1928. The results of two years indicate that no particular fertilizer combination is effective over the other combinations used. All fertilizer combinations increased the herb yield over that of the check plot.

4. "The Mints and Mint Oils," by Prof. E. N. Gathercoal, University of Illinois. An illustrated lecture was given covering the planting, cultivation, harvesting and distillation of mint oils in the producing sections of the United States. The author reviewed the history, statistics and chemistry of the mint oils.

5. "Histological Studies on the Genus *Mentha*," by Helena Hoelscher and F. J. Bacon, Western Reserve University. A comparative study of the several species of mints was presented. Types of simple and glandular hairs were illustrated and classified with a view to determining the age of the leaf for maximum oil production. A direct relationship exists between the types and number of glandular hairs and oil production. It was pointed out that these leaf hairs may be easily brushed off and this may account for low oil yields at certain stages in the growth of the plant.

The Symposium devoted more than four hours to papers and discussions on related problems. The members of the group regret that representatives from the trade were not present. It is hoped that next year the program will be of sufficient interest to attract all people interested in mints.

INVESTIGATION OF CHARGES OF ALLEGED IMPROPER ADMINISTRATION OF THE FOOD AND DRUGS ACT.

The hearing begun June 3rd before the Senate Committee on Agriculture and Forestry, investigating charges of improper administration of the Food and Drugs Act is progressing slowly. The testimony is assuming a much wider range than at first proposed and indications are that the investigation which was at first thought to require two days will extend over that many weeks.

THE RANSELL BILL BECOMES LAW.

The Ransdell Bill has become law by the signature of the President, after receiving the approval of Congress; under it the Hygienic Laboratory is made the nucleus of the new establishment, which will be devoted to the purpose of inquiring into the cause, prevention and cure of diseases. The Treasury Department is specifically authorized to accept gifts from private sources for the furtherance of these investigations, much as the Library of Congress was authorized some years ago to accept donations in its field. A system of fellowships in scientific research has been devised in order to secure the proper personnel. Senator Ransdell, speaking on the results to be derived, said: "Beyond question there should be one place in the United States where unceasing efforts are being made to conquer disease. While very remarkable and most beneficial effort have been made in the war against disease by researches in science, our great medical schools and endowed institutions, there has never been in any one place a combination and concentration of all the branches of science such as is contemplated in the national institute of health."

It is proposed to bring together for this work "under one directing head the very ablest experts in the sciences of chemistry, pharmacy, dentistry, medicine, surgery, physics, biology, bacteriology and pharmacology."

NATIONAL WHOLESALE DRUGGISTS' ASSOCIATION TO MEET IN CHICAGO.

The week of October 13th has been selected as the time of the fifty-sixth regular meeting of the National Wholesale Druggists' Association. The meeting will be held in Chicago, with headquarters in the Edgewater Beach Hotel.