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An examination of Wisconsin oil of Monarda Punctata: NELLIE WAKEMAN. (By title.) Following up the work on "A Possible New Terpene in the Volatile Oil of *Monarda Punctata*,"[5] reported upon at the New Orleans meeting of the American Chemical Society in 1915, another examination of the oil has been made. This study confirms in every particular the earlier report. The low boiling terpene fractions contain a hydrocarbon, $C_{10}H_{16}$, which yields a nitroso chloride melting at 89°. This in turn yields a nitrolpiperidide which melts at 198°–199° and a nitrolbenzylamide which melts at 103°. With aniline the nitroso chloride behaves like that of pinene, the regenerated hydrocarbon having a pinene-like odor, quite different from the original oil. The fraction boiling at 165°–168°, which gives the most abundant yield of nitroso chloride, exhibits the following physical constants at 20°. Specific gravity 0.8476; optical rotation + 4.48; index of refraction 1.4698. The low boiling nonphenol fractions also contain isovaleric aldehyde, identified by its p-nitro phenylhydrazone which melts at 108°–109°, also by oxidation to an acid and its determination as silver valerinate. The noncrystallizable phenol portion contains carvacrol, hitherto not known in this oil, identified by its phenyl urethane melting at 137°.

On hemoglobin, 1. Optical constants: WM. H. WELKER AND CHAS. S. WILLIAMSON. The absorption constants of hemoglobin from various species of animals were studied by means of the spectrophotometer. The hemoglobin was prepared by a method, which was more favorable for the removal of associated colloids than the older methods. Hemoglobin from the dog, ox, cat, chicken, guinea-pig, rat, sheep, horse, pig and man were studied. The results obtained would indicate that if there is any difference in the absorption constants of hemoglobin from different species, these differences are not sufficiently large to serve as means of identification of the species.

Analysis of pleural fluid from a case of chylothorax: WM. H. WELKER AND CHAS. S. WILLIAMSON. Quantitative analyses of pleural fluids obtained from cases of chylothorax are extremely rare in medical literature. The analysis of the fluid obtained from this case, follows:

[5] SCIENCE, Vol. 42, p. 100.

	Per Cent.
Specific gravity	1.0199
Solids (total)	6.64
Ash (ignition at 750° C.)	0.85
Nitrogen (total	0.75
Nitrogen (non-colloidal)	0.02
Nitrogen (colloidal, calculated as protein)	4.56
Lipins (total)	0.79
Lipins (unsaponifiable)	0.75
Chlorin (calculated as NaCl)	0.73

Digestibility of avocado and certain other oils: H. J. DEUEL AND ARTHUR D. HOLMES. (By title.) The experiments were carried on similarly to the previous ones in which the digestibility of about 50 different oils has been determined. With the exception of the avocado fat, the oils and fats included in this study incorporated in a special cornstarch blancmange or pudding were eaten with a simple basal diet (commercial wheat biscuit, oranges and sugar) which supplied only a very small amount of fat and tea or coffee was used according to personal preference. It was thought best to test the digestibility of avocado fat by serving the fruit as it grows with a simple basal ration very nearly fat-free, the avocado being eaten in such quantities that it supplied an amount of fat comparable with the fat consumed in other fat experiments. Weighings were made of all the food served and refuse remaining, the difference between the two representing amounts eaten. The fat of water-free feces was also recorded. Both food and feces were analyzed in order to determine the amounts of protein, fat and carbohydrate in each. The difference in the amounts of these constituents present in the food and in the feces was taken to represent the amounts of each actually utilized by the body. The estimated digestibility was avocado fat 82.5 per cent., capuassu fat 92.7 per cent., cohune oil 99.0 per cent., hempseed oil 98.5 per cent., palm-kernel oil 98.0 per cent., and poppy-seed oil 96.3 per cent. The digestibility of avocado fat is somewhat lower than that found for most fats and oils. While the intake of avocado fat varied somewhat with the different subjects, the data available is not sufficient to warrant any conclusions as to whether or not a smaller intake of avocado fat would have been more completely assimilated. The average amount of fat eaten daily in each of the experiments was: Avocado 90 grams, capuassu fat 40 grams, cohune oil 52 grams, hempseed oil 53 grams, palm-kernel oil 100 grams and poppy-seed oil 49 grams. The number of experiments re-

ported in each group was 4 with the exception of hempseed in which three experiments were reported and poppy-seed in which 7 experiments were reported. The subjects reported no laxative effect in any of the experiments with the exception of slight disturbances with the capuassu fat which was similar to the disturbances caused by cocoa butter. The general conclusions are that these fats should prove valuable for food purposes and that cohune, hempseed, poppy-seed and palm-kernel oils are very completely assimilated by the body.

Experiments on the digestibility of entire wheat flour ground by various processes: C. F. Langworthy and H. J. Deuel. (By title.) It seemed advisable to determine what effect different methods of milling had on the digestibility of entire wheat flour so experiments were carried out with entire wheat flour ground in five different commercial processes. The different methods of milling used were: (1) A commercial roller mill, (2) roller mill of the Bureau of Chemistry, (3) burr stone mill, (4) steel burr mill, and (5) attrition mill. The experiments were conducted in the same manner as previous experiments of such a nature have been carried on by this office. The flour was incorporated in a ginger bread and fed with a basal ration of oranges, butter and sugar, and tea or coffee was used according to the individual preference. The general results from these experiments seemed to indicate that the finer the wheat is ground, the more completely the protein is absorbed while the percentage of carbohydrate absorbed remains nearly constant. Even in the most finely-ground flour, the protein was only 79 per cent. absorbed while in the case of highly-milled flour (*i. e.*, flour in which the bran has been removed), it has been found that it is about 88 per cent. digested. In the case of the flour milled on the stone burr and steel burr mills the digestibility of the carbohydrate was found to be 97 per cent. and 95.5 per cent. digested, respectively. The protein in each case was 79 per cent. digested. The digestibility of the flour milled on the attrition mill was 95.5 per cent. for the carbohydrate and 74.5 per cent. for the protein. With the commercial sample of roller-milled flour, 94 per cent. of the carbohydrate was digested and 70 per cent. of the protein, and with the sample prepared in the laboratory roller mill, the carbohydrate was 95 per cent. digested and the protein 71 per cent. Both the samples ground on a roller mill were considerably coarser than those ground on any of the other three mills. It is expected that a bulletin will appear shortly giving a summary of these experiments.

Adsorption of fat by fried batter and doughs and causes of their variations: Minna C. Denton and Edith Wengel. (By title.) The various ingredients of the dough exert varying effects upon fat absorption. The gluten of wheatflour, when acted on by hot fat of suitable temperature, tends to form a crust which prevents or hinders fat penetration; so the stiffer dough absorbs less fat, other things being equal. Sugar increases fat absorption very decidedly. Fat present as an ingredient of the dough, *greatly* increases the fat absorption. Egg, if not above 60 per cent. of the weight of the liquid (as is the case in doughnut recipes) does not lessen the fat absorption, but contrary to current opinion seems even to increase it somewhat. Many details of manipulation exert the most profound effects upon fat absorption. Length of time of frying and relative amount of surface exposed, are two of the most important. Crust formation is of the greatest importance. Any manipulation increasing volume (and consequently surface) increases fat absorption. Turning the cakes repeatedly as they fry increases fat absorption, because it promotes the exposure of a soft crust, to the hot fat. The influence of temperature upon fat-absorption (constant time, temperature 150° C. and 200° C.) is variable and depends entirely upon the consistency and ingredients of the dough. In practical cookery, however the time would be reduced at the higher temperature and this would lessen fat absorption. Temperature is important also because of its influence upon crust formation and upon expansion of the dough.

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Secretary

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