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Oilproof containers for food (N. V. Nederlandsche Linoleumfabriek) 23.

Germ-free liquid food. Hollandsche Osano N. V. **Dutch 52,998,** Aug. 15, 1942. Milk and cream are sterilized by removing gases therefrom and pressing in pure oxygen, then heating under an O_2 pressure of more than 2 atm. abs. for 1–8 hrs. at 50–65°, and cooling under the same O_2 pressure. A. J. C. van de Waal — *a*

Food product from starch. N. V. W. A. Scholten's Chemische Fabrieken. **Dutch 52,875,** July 15, 1942. Starch from potatoes, sago, or manioc is mixed with at least 5% protein (milk powder) and 100% water at most and converted into cold-water paste. **Dutch 53,346,** Oct. 15, 1942. Starch is mixed with protein, water, and an acid, gelatinized, and flaked. Ninety kg. potato starch, 10 kg. skim-milk powder, 85 l. water at 60°, and 0.5 kg. salt are acidified by phosphoric acid to pH 6 and gelatinized. A. J. C. van de Waal — *b*

Food-conditioning composition for use in refrigerators. Mortimer J. Stammelman. **U.S. 2,417,889,** Mar. 25, 1947. Drying, shrinkage, and interchange of odors of foods kept under refrigeration may be inhibited by the use of a 3 to 6% soln. of AcOH absorbed in a mixt. of 4 parts plaster of Paris and one part diatomaceous earth. Addnl. AcOH may be added as required to replace that which evaporates. E. O. Whittier — *c*

Improving grain. Wessanen's Koninklijke Fabrieken N. V. **Dutch 53,085,** Sept. 15, 1942. Grain is treated some minutes at reduced pressure with sulfur dioxide and steam simultaneously at 40–85° for sterilizing and bleaching. A. J. C. van de Waal — *d*

Conditioning grain before milling. Wessanen's Koninklijke Fabrieken N. V. **Dutch 53,149,** Sept. 15, 1942. Steam at a pressure of less than 1 atm. and a temp. of 35–55° is led through the grain for 1–2 hrs.; this renders the husks somewhat moist and prevents their being ground too fine. Cf. *C.A.* **36,** 4216⁷. A. J. C. van de Waal

Device for testing the sediment content of milk and the like. Bernard L. Kinyon. **U.S. 2,414,044,** Jan. 7, 1947. A portable, power-operated sediment tester is described. M. L. H. — *e*

Solid sugared milk products containing reducing sugar. N. V. Nederlandsche Gruyère-Blokmelkfabriek. **Dutch 52,316,** April 15, 1942. Milk, partially creamed milk, or cream with sugar is condensed in a vacuum to a paste after having dissolved in it glucose or other reducing agent of a reduction-oxidation potential of about 30–50 mv. in sufficient quantity to eliminate oxidation of milkfat (1 part of glucose in 3 parts of milkfat). The reducing substance is only a part of the sugar content (40–50%). The water content is 6–15% (preferably 8–12%). Oats, pudding powder, etc., can be added. A. J. C. van de Waal — *f*

Dehydrator for milk, fruit juices, and the like. William H. Taylor. **U.S. 2,414,215,** Jan. 14, 1947. M. L. H. — *g*

Use of sodium diacetate to retard or inhibit the growth of microörganisms in meat. Hans F. Bauer and Elmer F. Glabe (to Stein, Hall & Co., Inc.). **U.S. 2,417,806,** Mar. 25, 1947. An acetate contg. combined but undissocd. AcOH in its mol., such as $(AcONa)_2.(AcOH)_2.H_2O$, may be mixed with a meat product or applied to its surface to inhibit the growth of molds or bacteria. The acetate may be mixed with edible adhesives or binders prior to use. Expts. are described which indicate that 0.35% of Na diacetate is sufficient to inhibit the growth of bacteria and molds for 72 hours. Cf. *C.A.* **41,** 1355*a*, 2510*d*. E. O. Whittier — *h*

Concentrating aqueous dispersions with the use of vegetable material. Algemeene Vereeniging van Rubberplanters ter Oostkust van Sumatra. **Dutch 55,653,** Dec. 15, 1943. Latex or milk can be concd. by contact with dry vegetable material that absorbs water. E.g. 100 cc. milk was treated with resp. 20, 30, 40 g. soybeans. The dry contents rose from 13.62% to 17.85, 21.07, and 25.05%. A. J. C. van de Waal — *i*

Control of moisture content in dried foods by precooking. Robert M. Schaffner (to Guardite Corp.). **U.S. 2,417,843,** Mar. 25, 1947. The higher the temp. of precooking a food product, the lower will be the water content of the product after undergoing a predetd. drying cycle. Damage to the structure of the product is the limiting factor detg. the temp. used. A max. temp. of 229°F. for about 2 min. is suggested for cooking potatoes prior to drying. E. O. Whittier — *j*

Dry potato product. N. V. Machinefabriek Reineveld. **Dutch 53,342,** Oct. 15, 1942. Heating the potato cuttings is combined with treating them with aldehydes, e.g. 50–2000 g. butyraldehyde for 100 kg. cooked potatoes (just underdone). It is intended as a supplement to bread dough. A. J. C. van de Waal — *k*

Portable food dehydrator. Wright W. Gary (to Filtrol Corp.). **U.S. 2,414,642,** Jan. 21, 1947. The app. is charged with a desiccant, such as silica gel, anhyd. charcoal, activated alumina, bauxite, anhyd. $CaSO_4$, diatomaceous earth, C black impregnated with $CaCl_2$ or other water-adsorbing medium. This desiccant is carefully dried to about 5–8% moisture. The vegetables or other food to be dehydrated are placed below the diaphragm contg. the desiccant. The dehydrator may be placed in the oven of a cookstove set at 100–20°F. or else connected to a vacuum recirculation pump. M. L. Hoseh — *l*

Protein-saving fodder. De Nederlandsche Centrale Organisatie voor toegepast-natuurwetenschappelijk Onderzoek. **Dutch 57,070,** March 15, 1946. Sugar-contg. fodder is sepd. into saccharine juice and pulp. The juice is fermented by lactic acid bacteria and neutralized by NH_3, then concd., and mixed with the more or less dried pulp. E.g., 4100 kg. beets was crushed, yielding 2890 kg. juice (11% sugar) and 1210 kg. pulp. To the juice was added 5% by wt. of pulp, dried at 30°, and the juice fermented by *Thermobacterium delbrücki* at 50°, gradually neutralizing it by a 22% NH_3 soln. For 48 hrs. pH was kept between 5 and 6 and 90% of the sugar converted into lactic acid. The lactate soln. was concd. to 1/3 of its vol., and the inspissated liquid (about 1000 l.) mixed with the pulp, weighing about 23% of its former wt. There was obtained 1300 kg. fodder with 3% N content. A. J. C. van de Waal — *m*

Protein-fat concentrates from chick-hatchery wastes by treatment with lignin. Wm. D. McFarlane and Nikolai Nikolaiczuk (to The Ogilvie Flour Mills Co., Ltd.). **U.S. 2,418,311,** Apr. 1, 1947. A protein-fat concentrate suitable for use in mixed feeds may be prepd. from chick-hatchery waste by cooking it with sulfite waste liquor. A mixt. of 200 parts of the waste and 35 parts of sulfite waste liquor was boiled for about 5 min. by direct steam. The coagulum, pressed and dried, contained on a shell-free basis crude protein 50.35, fat 39.75, ash 2.46, and water 1.2%. The amts. of protein and fat recovered were approx. 92% and 94%, resp. E. O. Whittier — *n*

13—CHEMICAL INDUSTRY AND MISCELLANEOUS INDUSTRIAL PRODUCTS

T. H. CHILTON

Organization of the industrial research laboratory. Ernest H. Volwiler (Abbott Labs., North Chicago, Ill.). *Chem. Eng. News* 25, 1326–30(1947). E. J. C. — *o*

Principles of industrial hygiene. David B. Dill (Harvard Univ.). *Can. Textile J.* 64, No. 3, 38–9; No. 4, 45–6, 48(1947).—An address. Leopold Scheflan — *p*

Professional training. S. C. Lind. *Chem. Eng. News* 25, 1369–70(1947).—Report by the chairman of the ACS Comm. on Professional Training (cf. *C.A.* **40,** 3543³). E. J. C. — *q*

Codes for the prevention and control of occupational diseases. J. J. Bloomfield (U.S. Pub. Health Service, — *r*

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Bethesda, Md.). *Ind. Hyg. Foundation, Trans. 11th Ann. Meeting, Bull.* No. 8, 71–9(1947).—Present legislation, codes of various states, and the development of standards are discussed. Max. allowed concns. in air according to various codes are given for acetone, Am acetate, C_6H_6, butanol, Bu acetate, CS_2, EtOH, C_2H_5Br, CH_2O, gasoline, MeOH, MeCl, naphtha, $C_6H_5NO_2$, N oxides, PH_3, SO_2, turpentine, xylene, CCl_4, AcOH, acrylonitrile, NH_3, $PhNH_2$, AsH_3, CO, $CHCl_3$, $EtCHClNO_2$, cyclohexane, *o*-$C_6H_4Cl_2$, $CHCl_2CH_3$, $(CH_2Cl)_2$, dichloroethyl ether, $PhNMe_2$, HCl, HCN, HF, H_2Se, H_2S, PhCl, $O_2NC_6H_4Me$, $COCl_2$, $(Me_2CH)_2O$, styrene, $CCl_2:CCl_2$, PhMe, $CHCl:CCl_2$, BaO_2, Cd, chlorobiphenyls, chromic acid, $MeC_6H_3(NO_2)_2$, Pb, Hg, tetranitromethylaniline, TNT, ZnO, and asbestos. Leopold Scheflan

Chronic intoxication by carbon disulfide. An analysis of 100 cases. Enrico C. Vigliani. *Med. lavoro* **37**, 165–93 (1946).—Poisoning by CS_2 between 1939 and 1942 in the manuf. of artificial textile fibers by the viscose method is reported. The concn. of CS_2 in the air of the various departments is shown in relation to the no., the gravity, and speed of the onset of intoxications. Concns. of CS_2 vapors above 0.50 mg. per l. up to 2.5 mg. per l. may cause intoxication in a few months. Concns. of CS_2 from 0.20 to 0.35 mg. per l. are only rarely the cause of intoxication. Concns. below 0.20 mg. per l. never have caused intoxication. Conclusion: Concns. of CS_2 from 0.15 to 0.20 mg. per l. are the highest tolerable, and concns. from 0.15 to 0.20 mg. per l. can be considered as safe. W. R. Eichler

Mercury-vapor hazards in chemical laboratories. Lucian E. Renes and Harry E. Seifert (U.S. Pub. Health Service, Bethesda, Md.). *Quart. Am. Ind. Hyg. Assoc.* **7**, No. 4, 21–5(1946).—Atm. Hg-vapor concns. were detd. in labs. with a General Electric portable Hg-vapor detector, operation of which depends on the opacity of Hg vapor to ultraviolet light of a wave length of 2537 A. In many chem. labs. in which Hg was employed in chem. app., Hg-vapor concn. was in excess of the max. allowable 0.1 mg./cu. m. of air. Accidental spills and poor housekeeping resulted in widespread and general contamination of floors and lab. benches. Treatment of contaminated surfaces with polysulfides was not an adequate control measure. Thorough washing of the contaminated surfaces followed by waxing reduced the exposure effectively. Leopold Scheflan

The bone marrow in lead poisoning. I. The appearance of bone marrow smears (mielogram). Giulio Saita. *Med. lavoro* **37**, 207–16(1946).—S. studied the behavior of the mielogram in 12 cases of occupational lead poisoning. In almost all cases, he found some hyperplasia of the erythroblastic system. This hyperplasia becomes more evident in cases of acute saturnism when compared with two cases of chronic saturnism of long standing. The maturation curves show an accelerated evolution rhythm in cases of acute saturnism, while retardation of cellular maturation was observed in chronic saturnism. This change is not only at the expense of the erythroblastic system but also of the granuloblastic system. As a whole, the changes in the mielogram in saturnism in a human being are relatively moderate and not definitely caused by lead poisoning, since they are common to many and varying anemia pictures and as such may be attributed, at least in part, to the intensity of peripheral hemolysis. Nevertheless, the fact that the changes sometimes are out of proportion to the signs of hyperhemolysis and, as a whole, are analogous, although on a somewhat reduced scale, to the exptl. changes obtained by mass intoxication of animals, these early changes, which are so rapid and intense that they cannot be considered as secondary symptoms, lead one to believe that one should not overlook the fact that the changes in saturnism in human beings must not be attributed entirely to the direct action of the poison on the blood-forming organs. W. R. E.

A bibliography on protective respiratory devices and the physiology of respiration through resistance and masks. Leslie Silverman (Harvard School of Pub. Health, Boston, Mass.). *Quart. Am. Ind. Hyg. Assoc.* **7**, No. 4, 3–20 (1946).—The bibliography lists numerous literature references dealing with (1) physiol. measurements and data on respiration in gas masks and on resistance to breathing, (2) related physiol. material to breathing in gas masks, (3) phys. and chem. data on gas masks and respirators, and (4) patents on the gas masks, respirators, and valves. Leopold Scheflan

Avoiding unnecessary solvent losses. John E. Hyler. *Products Finishing* **11**, No. 4, 38, 40(1947).—The proper use of vapor degreasers and the recovery of dirty solvent are discussed briefly. Leopold Scheflan

American Society for Testing Materials, Standards, 1946. III-A. Nonmetallic materials. 1290 pp.; cf. *C.A.* **39**, 2590[1]; **40**, 4822[7].—*Standards adopted or revised in 1946* are given for: sampling coals classed according to ash content; lab. sampling and analysis of coal and coke; test for free-swelling index of coal; test for ash content of petroleum oils; test for carbon residue of petroleum products; test for distn. of gasoline, naphtha, kerosene, and similar petroleum products; test for flash and fire points by means of open cup; test for flash point by means of the Pensky-Martens closed tester; test for gum in gasoline; test for knock characteristics of motor fuels; test for oxidation stability of gasoline; test for water in petroleum products and other bituminous materials; test for water and sediment in petroleum products by means of centrifuge; sampling and analysis of soaps and soap products; analysis of soaps contg. synthetic detergents; sampling and analysis of special detergents; reporting results of analysis of industrial waters; tests and tolerances for knit goods; test for air permeability of textile fabrics; tests and tolerances for rope; tests and tolerances for spun, twisted, or braided flax, hemp, and ramie products; A.S.T.M. thermometers. *Tentative standards issued or revised in 1946* are given for: test for calorific value of gaseous fuels; test for acid and base nos. of petroleum oils and products; test for aniline point and mixed aniline point of petroleum products; test for foaming characteristics of crankcase oils; test for inorg. chlorides and sulfates in insulating oils; testing of elec. insulating oils; test for knock characteristics of aviation fuels; test for olefins and aromatics in petroleum distillates; test for oxidation stability of aviation gasoline; test for normal pentane and benzene insolubles in used lubricating oils; analysis of petroleum sulfonates; test for rust-preventing characteristics of steam-turbine oil in the presence of water; test for sediment in fuel oil by extn.; test for sulfated residue from new lubricating oils; test for S in lubricating oils contg. additives and in additive concentrates; test for S in petroleum oils by lamp method; test for kinematic viscosity; industrial-grade benzene; test for sp. gr. of industrial aromatic hydrocarbons; tentative definitions of terms relating to soaps and other detergents; test for dissolved O in industrial waters; field test for tendency of boiler water to cause embrittlement cracking of steel; field sampling of water-formed deposits; quant. analysis of textiles; a universal system for yarn numbering; tentative definitions of terms relating to textile materials; woven asbestos cloth; tests and tolerances for cotton tire cord and rayon tire cord; tests and tolerances for glass yarns; test for compatibility of glass yarn with insulating varnish; tests and tolerances for continuous-filament rayon yarns; test for colorfastness to atm. gases of dyed cellulose acetate rayon; A.S.T.M. thermometers; detn. of pH of aq. solns. with the glass electrode. *Tentative revisions, submitted in 1946, of standards* are given for: test for burning quality of kerosene oils; testing elec. insulating oils; chip soap; compound chip soap (with rosin); olive oil chip soap; powd. soap; olive oil solid soap; milled toilet soap; white floating toilet soap; textile-testing machines; test for fineness of wool; specifications and test for fineness of wool tops; test for hard scoured wool in wool in the grease; definitions of terms relating to textile materials; A.S.T.M. thermometers. **III-B. Nonmetallic materials.** 1360 pp.—*Standards adopted or revised in 1946* are given for: test for acetone extn. of phenolic molded or laminated products; testing of laminated round rods, laminated tubes and of