school of nutrition said that the future of the dairy industry lies in concentrating on the sale of whole milk and possibly on cheese, but butter will have to compete with fortified vegetable fats. He advised the dairy industry to get away from fixed standards and find more economical outlets for its fats, such as dairy spreads using skim milk solids.

J. C. Hackney of Braun & Co., Vancouver, discussing consumer preferences for livestock products, said his studies show that beef is the most popular meat by far, making up 37% of all demand. Smoked meat makes up 12% of demand, with fresh pork at 11%, poultry at 10%, and lamb and fish with 3% each. He said there was a special need to produce more lamb and promote for year-round consumption. Consumption of meat in the U. S. is appreciably higher per person than in Canada, which should ensure continuing markets for Canadian livestock producers, he said.

Cocoa Supply Expected to Improve

CHICAGO.—With the price of cocoa beans towering in the 60 to 70 cents-per-pound range, after an abrupt rise from about 40 cents in November 1953, large numbers of seriously concerned confectioners were on hand here last week for a panel discussion dealing with cocoa beans, chocolate, and confectioners' coatings. Staged during the annual convention of the National Confectioners' Association as a joint session with the Associated Retail Confectioners of the U. S., the half-day panel played to a standing-room-only audience. According to Philip P. Gott, NCA president, the price of cocoa beans—now about 13 times the 5 cents-per-pound level of 1941—is forcing candy makers to decide whether to reduce the amount of chocolate in their products, or raise their prices to correspond with those of their raw materials. The latter alternative would almost certainly mean elimination of the traditional 5-cent candy bar.

While it by no means solves the immediate problem of prohibitive cocoa bean prices, the long-term outlook in the cocoa situation is generally favorable, according to Jacob M. Schaffer of the Business and Defense Services Administration. Production trends are up in the two principal Latin American producing countries, Brazil and the Dominican Republic, Schaffer reported.

Some of this increased production, Schaffer observed, may be attributed to application of improved practices developed through years of research at experiment stations. In Brazil, for example, more attention has been given to rehabilitation of existing plantations and trees than to extending cultivation to new acreage. In Puerto Rico and areas in which improved practices have been applied under controlled methods, production has been raised from the usual level of about 100 pounds of cocoa beans per acre to a level of 500 to 600 pounds per acre. New plantings are going ahead at a good rate in many areas. One such area is Costa Rica, which in the next few years will show a "very substantial increase" in production, Schaffer said.

New Production. The American Cocoa Research Institute, according to ACRI consultant L. J. Schwarz, has been working steadily not only in the Western Hemisphere, but in promising areas throughout the world, to establish new production wherever feasible, and to improve production practices wherever possible. In the past two or three years alone, said Schwarz, ACRI has supervised the cutting out of some 27 million diseased trees in the Gold Coast area of Africa, in order to combat swollen shoot disease. Removal of affected trees is the only control method known thus far; the disease is now coming under control, Schwarz observed, and production in the Gold Coast area should improve henceforth. Also in Africa, ACRI has assisted Liberia in the establishment of a cocoa-growing industry.

In the Western Hemisphere, Schwarz stated, ACRI's efforts have been concentrated on building up a core of specialists in cocoa culture, production, and research. At the same time, the institute has pushed research and development at its research center, dealing with pests and disease control, development of improved species, and plant nutrition. Scientists are currently at work on high-yield plant materials that promise to afford 10 times the 100 to 200 pounds per acre cocoa yields currently realized in Mexico and Ecuador, Schwarz reported.

By-Products Used. Much discussion following the panel presentation was devoted to the use of confectionery coatings, based on "hard butter" or hydrogenated (hardened) vegetable oils and dry portions of the cocoa bean previously considered by-products. "Fair-weather" interest has delayed scientific development of such coatings as replacements for traditional pure chocolate coatings, according to J. J. Alikonis of Paul F. Beich Co., and has left the confectionery industry poorly equipped to handle such emergencies as the current cocoa market situation. Interest is now at an all-time high, said Alikonis, and confectioners have an unprecedented opportunity to improve and extend the use of confectioners' coatings.

Actually, marked improvement in the quality of such coatings has been effected during the past few months, and their use is expected to expand rapidly—especially as long as raw material prices are exceptionally high. A subcommittee on confectionery coatings, operating under the NCA's research and development committee, presented during the panel discussion its preliminary, confidential report outlining basic precautionary steps that should be followed by confectioners in adapting their processes to use of the new coatings.

Justin J. Alikonis (right), director of research for the Paul F. Beich Co. and president of AACT, receives the Stroud Jordon Award from Hans Dresel of Felton Chemical, award winner in 1953. The award is presented for "outstanding contributions in the field of candy technology"

Industry

Columbia River Chemicals' NH_3 Plant to Be Built by Fluor

Columbia River Chemicals, Inc., has awarded the contract for its proposed nitrogen fertilizer plant near Pasco, Wash., to Fluor Corp. The plant will produce 160 tons of anhydrous ammonia a day, 110 tons a day of urea, and 140 tons of ammonium sulfate a day, according to the principals, W. R. McRae, and A. F. D. Short. The output will be for agricultural purposes, it was said, except for 50 tons of each day's anhydrous ammonia and 15 tons of urea each day.

Field work on the plant is to start this fall and construction is expected to be finished during the latter part of 1955.

Hydrogen is to come from Bunker C fuel oil, which is to be shipped by barge on the Columbia River. The plant will also be designed to use natural gas when it becomes available in the area.

Marketing of anhydrous and aqua ammonia, urea, ammonium sulfate, and urea-ammonium nitrogen solutions for agricultural use will be handled by Pacific Supply Cooperative.

Hercules Starts Ammonia Line At Mo. Ordnance; May Produce Other Chemicals

Hercules Powder has announced that production of anhydrous ammonia at the Missouri Ordnance Works at Louisiana, Mo., has started. One ammonia line is now operating and the other two lines are to be in within the next few weeks. Hercules also announced that studies are being made of the possibilities for producing other chemicals there. One of the ammonia lines, it said, could be readily converted to produce methanol. Pentaerythritol and formaldehyde production are also being contemplated.

Armour Feed Plant Burns In Chicago; $500,000 Loss

Armour & Co. suffered a $500,000 loss in a fire at its animal feed plant in Chicago near the stock yards. There were no injuries or fatalities. A fourth of Chicago's fire fighting equipment was summoned to prevent the flames from reaching chemicals and natural gas stored near an adjoining fertilizer plant.

The fire was thought to have been started by a dust explosion.

Du Pont to Build Freon Plant at Louisville

Du Pont has announced plans to build a new plant for increasing production of Freon-22 monochlorodifluoromethane, refrigerant and aerosol propellant. The plant, capacity for which was undisclosed, will be constructed on the site of the company's Louisville, Ky., works.

Completion of the plant, with which the company expects to meet needs for many years, is scheduled for the fall of 1955.

Central Soya to Put Up Feed, Soybean Plant at Chattanooga

Central Soya Co. of Fort Wayne, Ind., had announced plans to build a soybean-processing and feed-manufacturing plant on a 67-acre tract near Chattanooga, Tenn. The plant will be operated by McMillen Feed Mills, the feed division of Central Soya. The plant will increase the company's soybean capacity to more than 40 million bushels annually and its feed manufacturing capacity to over 1 million tons per year.

Calspray Affiliate Opens Insecticide Plant in Mexico

Insecticidas Ortho, an affiliate of California Spray-Chemical, has opened a warehouse and dust mill for making finished insecticides in Lower California at Mexicali. It is designed to serve the rich Mexican agriculture area nearby and will be operated entirely by Mexican personnel. The plant is the 46th opened since Calspray and its affiliate began an expansion program in 1947.

Du Pont to Build Laboratory For Studying Packaging Film

A laboratory for studying synthetic polymers for packaging and industrial film is to be built at Du Pont's experimental station near Wilmington. The new building, to cost $1,275,000, is the first major addition to the $30 million station since its dedication in 1951.

The laboratory will accommodate about 45 employees.

Research

Cesium-137 Sterilizes Trichina Economically in Packing Plants

Gamma radiation equipment designed to break the trichina cycle in hogs can be installed and operated in a 2000-hog-per-day packing house for about one quarter of a cent per pound of pork processed, it was disclosed at Ann Arbor, Mich., recent International Congress on Nuclear Engineering, sponsored by the American Institute of Chemical Engineers.

In a typical packing house, the cleaned and spread hog carcasses spend from 24 to 28 hours in a chill room before being further processed. Their proposed trichina sterilization process might well be fitted into this period, say H. J. Gomberg, S. E. Gould, L. E. Brownell, and J. H. Nehemias, University of Michigan. The necessary dosage, about 30,000 rep, would be administered by conveying the still intact carcasses in two lines past both sides of a 6 foot by 5 foot by 0.4 inch plaque containing radioactive cesium-137. Such an installation could handle 2000 hogs a day, say the authors; conveyor speed at this capacity would be 6.67 feet per minute.

Gamma dosages of up to 60,000 rep have been found to cause no detectable