

CHEMISTRY

Water-Proof Transparent Wrapping Films Developed

AN INVENTION patented posthumously may bring marked changes in the transparent wrapping films industry.

The new wrapping film, described in U. S. Patent No. 2,123,883 just issued to the estate of Deane C. Ellsworth, Wilmington, Del., is a glass-clear, moisture-proof and water-insensitive material. It promises to find a wide variety of uses now performed by Cellophane and other similar transparent films.

The major new quality of the film, states the patent, is the fact that it can stand actual immersion in water for long periods without losing its moisture-proof properties. Present-day transparent films are moisture-proof to a large extent but cannot retain this property long when in actual contact with water.

In wrapping butter, cheese and other dairy products, moisture or wetness loosens the wax backing of the cellulose film and soon makes it unfit for service. That is why most butter is still wrapped in waxed paper and not in

transparent films.

The late Mr. Ellsworth's patent, assigned to the E. I. du Pont de Nemours Company, is based on "the surprising and apparently irrational discovery . . . that a slight etherification of the cellulose caused wax coating compositions to adhere to the extent necessary to produce a desirable water-proof wrapping tissue. This discovery was all the more incredible because it was known at the time that partially etherified cellulose was more water sensitive than regenerated cellulose itself."

Thus the etherification of the cellulose film enables the water-proof waxy compounds to stick tenaciously to it, and brings about a superior wrapping film.

The Ellsworth patent, having 16 basic claims, listed in detail the preparation of 39 different formulae for making different kinds of water-proof film.

Some of these films withstand a month of actual immersion in water before the water-proofing layer separates from the cellulose film back.

Science News Letter, August 6, 1938

there are 221 approved cancer centers, with 50 more in line for approval. A hundred other hospitals and clinics have indicated their desire to treat cancer in a major way and the federal funds will speed this development.

The University of Chicago received \$7,500 for investigation of various phases of research work, including stomach cancer, the effect of hormones and chemical substances in cancer tissues.

Science News Letter, August 6, 1938

CHEMISTRY

Dog Foods Vary Greatly In Nutritive Content

THE BLUE ribbon winners at America's dog shows are primed for their awards on special diets of freshly chopped meats with added vitamins and minerals that make their food rival that of human beings in quality. But the uncounted millions of "just dogs" in the nation rely on their wits or on a can opener in the hands of their owners, for their daily rations. Packers of dog foods, in fact, are among the leading users of tin cans in the nation.

But what goes into those cans? Fido's master seldom knows and if the dog eats the food all may seem well. However, a chemical analysis will show amazing variations in the nutritive content of a can of dog food. Some of the superior dog foods are almost on a par with the potted meat products sold for human consumption. Others are inferior.

In *Industrial and Engineering Chemistry* (June), Carl J. Koehn of Alabama Polytechnic Institute shows that many dog foods consist of nearly 80 per cent. moisture. Only one, out of 23 brands, showed a water content less than 50 per cent. The rest ranged between 66 and 79.69 per cent. with most of them in the seventies.

The protein content of dog foods, too, varied widely. Some samples ran as high as 13 per cent. protein while others showed only 4.65 per cent. Even this analysis is not too helpful for the important factor is the protein *available* for digestion, which can only be determined by a more complex biological test.

In fat content most of the samples showed around 4 per cent. but one brand consistently showed about 25 per cent fat, which is higher than is usually considered desirable for the dog's digestive system. Fiber content was low in all brands. Low also was the ash content, but without specification of what minerals comprised the ash.

Science News Letter, August 6, 1938

MEDICINE

Federal Anti-Cancer Funds Aid Battle on Many Fronts

MORE clinical and research fighters against cancer, \$200,000 worth of radium for cancer use, funds for a survey of clinics, and a new attack on the dangers of putting radium paint on watch dials were among the anti-cancer moves approved by the National Advisory Cancer Council meeting at Washington, D. C.

Seventeen physicians, two of them women and one a Negro, were given clinical fellowships for a year to enable them to become more expert in diagnosis and treatment of the disease. Surgeon General Parran of the U. S. Public Health Service also announced the appointment of ten research fellows in the government's drive against cancer.

Radium to the extent of 9½ grams, costing \$200,000, is being purchased and

will be loaned for therapeutic purposes throughout the various states.

A new instrument that will detect a millionth of a gram of radioactive material will be used in a new phase of the investigation of women watch-dial painters which Dr. Harrison S. Martland, Newark, N. J., chief medical examiner, has conducted for many years. The government is implementing this research in the hope that earlier detection of radium poisoning will result, allowing more hope of avoiding the dangers in this industry.

Hospitals and clinics for the treatment of cancer will be surveyed under a grant of \$6,600 to the American College of Surgeons. This will speed the work already under way by the national organization of surgeons. Already