

New Baking Powder Leaves No Residue

Chemistry

A baking powder which does not leave a residue in the finished bread or cake has just been worked out in the chemistry laboratories at the University of Wisconsin by Edwin O. Wiig. This new leavening agent has as its active agent acetonedicarboxylic acid, which during the baking process disappears entirely as gases.

The formation of carbon dioxide, the gas which "raises" the cake, is only part of the story of baking powder. The other part concerns the product which remains in the cake as a residue. The various commercial baking powders on the market at present leave as residues saline cathartics, such as sodium tartrate, Rochelle salt, disodium phosphate, sodium sulfate or aluminum hydroxide. There is still a question as to the possible ill effect of some of these materials upon health. Hence the advantage of a baking powder which leaves no residue whatsoever. Acetone is the only

other substance formed besides carbon dioxide, and the acetone completely evaporates at baking temperatures.

The new powder depends for its action on combination with the water of the dough, just as do the present powders. Hence in order to protect it from atmospheric moisture it is mixed with starch. This cornstarch has a second function, more important than that just mentioned. Starch makes it possible for the chemist to standardize his product. All baking powders much have approximately the same "raising" strength to make possible the use of any recipe. The housewife-consumer will not consult the label of her tin of baking powder, and then compute whether the "two tsps. b.p." of her recipe should be doubled or halved. Starch takes care of any variation in the amount of carbon dioxide given off by active agents of differing compositions.

The keeping properties of acetonedicarboxylic acid baking powder are excellent, as Mr. Wiig has shown by various tests. It needs only to be kept in the customary moisture-proof tin. The keeping power of a product is of utmost importance to the manufacturer.

Further study of the suitability of acetonedicarboxylic acid as a leavening agent is being continued at the University of Wisconsin. The question of a cheaper source of raw material is still under investigation. At present citric acid is the raw material used in the making of acetonedicarboxylic acid. Cull lemons form the natural source of citric acid, and is the principal one in use. A shorter name for the substance would also be highly desirable, but that is a simple problem.

Science News-Letter, November 30, 1929

Sky Mappers of Alaskan Survey—Continued

consulting engineer for certain pulp and paper interests planning to build large paper mills in southeastern Alaska with an investment running into millions of dollars. For the first time Mr. Kinzie was able to get a bird's eye view of the timber concessions belonging to his employers, which are estimated as sufficient to supply their mills with pulp timber for at least 50 years.

A flight begun August 1, is believed to be one of the most important during the entire three years of operations. Two ships made mapping tours over Kruzof and Chichagof Islands while another plane made a six hour and 45 minute flight along the mainland to the northwest of Mount Fairweather. This was the longest single flight made by any plane in the detachment. The same afternoon a formation flight, carrying Dr. F. S. Smith and B. D. Stewart, executive officers of the Geological Survey, as passengers, was made over Taku Glacier and back again. Upon the return from this expedition a record was established by the tender Gannett, it is believed, in hoisting the four planes aboard the dock, although no special attempt was made to speed up operations. Thirteen minutes from the time the first plane of the formation touched water, the last plane landed on the dock. The Gannett's hoisting gear was de-

signed for reliability rather than for speed, so that the fact that it worked so well indicates the efficiency of her officers and crew.

At the close of his trip to Taku Glacier, Dr. Smith, in a letter to Commander Radford, officer in charge, said: "In quitting you and your associates of the Alaskan Aerial Survey Detachment, I want to record my admiration of the work you have accomplished and the valuable contribution you have made to the development of the north country. We of the Geological Survey recognize the immense value of the photographs you are making in all phases of our natural resources investigations, and I now realize the effectiveness of the airplane as a means of transportation and observation for the geologist and engineer."

On August 10, two planes of the detachment with Mr. B. F. Heintzelman of the Forest Service and Mr. R. H. Sargent of the Geological Survey, as passengers and observers, made a flight over the Taku River District to investigate the water power possibilities of three lakes recently discovered by the planes from photographs taken by the experts. That the discovery of these lakes has given new impetus to the development of the paper and pulp industry in southeastern Alaska is indicated by the following front page story published by

the *Alaskan Empire* of Juneau:

"The discovery of a lake by the Naval Alaskan Aerial Expedition capable of hydro-electric horsepower throughout the year, was announced today by E. F. Heintzelman, assistant district forester. It is located on the east shore of Taku Inlet, between Greely Point and Jaw Point, about two and a half miles from the beach. The discovery was made by Lieut. Commander A. W. Radford, flying one of the Naval Planes. It was apparent as soon as the photographs were developed that it was not shown on any existing maps and was hitherto unknown. The importance of the find in connection with the establishment of a pulp and paper mill here was emphasized today by Mr. Heintzelman. Both Mr. Heintzelman and Mr. R. S. Sargent flew over the lake and inspected the region as thoroughly as was possible from the air. Commenting on the find, Mr. Heintzelman said: 'This one discovery alone, in my opinion, far outweighs in value the total cost of all the aerial surveys made in southeast Alaska.'"

Navigators estimate that winds blowing along the seacoast of the Alaskan Peninsula in summer sometimes have a velocity of 80 to 100 miles an hour.

Science News-Letter, November 30, 1929