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AMENDED SPECIFICATION.

Reprinted as amended in accordance with the decision of the Assistant Comptroller, acting for the Comptroller-General, dated the 20th day of April, 1927.

PATENT SPECIFICATION

Convention Date (France): Dec. 7, 1922.

208,144

Application Date (in United Kingdom): Nov. 30, 1923. No. 30,204/23.

Complete Accepted: Feb. 12, 1925.



COMPLETE SPECIFICATION (AMENDED).

Improved Treatment of Protein Matter of Animal Origin for Industrial purposes.

I, ARMAND KREMPF, French citizen, of 49, rue Geoffroy St. Hilaire, Paris, France, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

Natives of the coast of the sea of China unknowingly work artificial digestion processes when preparing their brine, the most interesting and common kinds of which are termed "nuoc-mam" and "mam-tom". These processes are based on autolysis in the course of which the activity of bacteria must be prevented or hindered by sodium chloride at a concentration nearing saturation.

In the process for making nuoc-mam certain kinds of fish are used which belong to the clupea group, more particularly a small anchovy (*Stolephorus commersoni*) which is caught in large quantities on the coasts in spring and summer. Immediately after it is caught the fish is rather carelessly mixed with one third its weight of sea-salt. The whole is packed in large vats of a holding capacity of from one to two tons and is left for a period of time which may vary from three to six months according to the kind of initial material used. At the end of that time a liquid, which is the nuoc-mam, is drawn off from the digestion vat. When this product is well prepared it has a fine amber colour,

and a pleasing peptone smell, and a distinctive flavour much appreciated by all Asiatics.

From a chemical point of view the product is the result of the disintegration by digestion of albuminous substances. This digestion, which results from the action of proteolytic diastases from the digestive tracts of the animals engaged in their reaction, is consequently due to a great extent to the action of pancreatine or pancreatic juice and it is continued until the amino-acid stage is reached. There remain sometimes traces of peptone at the end of six months, and in that case the product shows the reaction of biuret. However, at the end of a year the peptones completely disappear in consequence of the slowly protracted digestion phenomena and the "nuoc-mam" at that moment is completely non-biuretic.

The "mam-tom" is a product of the same order which differs from the preceding product only by the nature of the animals used which, in this case, are shrimps.

This method of proceeding has the following disadvantages:

1) The high proportion of sea-salt in the nitrogenous derivatives produced as just stated, together with the complete impossibility of practically eliminating the said salt, has markedly limited the industries which can be fostered on these

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