

the material treated contains hydrocarbons.

It is known that hydrocarbons are to be found in the oils derived from animals belonging to the Selacian group. (1) Squalene or spinacene. This hydrocarbon is non-saturated, its formula is  $C_{30}H_{50}$  or  $C_{28}H_{48}$  and it has six ethylene linkages. (2) This hydrocarbon has the formula  $C_{18}H_{38}$ . It has not yet been given a name, but its constitution appears to be that of an octodecane.

The complete elimination of nitrochloroform is carried out in three stages in the course of the above-described operations.

Stage (a) nitrochloroform being very soluble in fats, the largest proportion of the nitrochloroform contained in the artificially digested material is removed together with the upper layer.

Stage (b) the products of (1), (2), and (3) are now subjected in thin layers to the action of a stream of air for the purpose of completely removing the vapours of nitrochloroform still retained by the said products after the fatty substances are separated.

Stage (c) the nitrochloroform dissolved in the fatty substances is separated therefrom by heating these substances to over  $100^{\circ}C$ .

As may be seen from the foregoing, the invention mainly relates to industrially forming and extracting utilisable nitrogenous derivatives and fatty materials, by artificial digestion, applicable to fish and offals thereof, and generally to organic products and offals of animal origin.

After treating the animal material with nitrochloroform, it may be subjected at once to the process according to this invention, or if desired the material may be put aside for some time as the nitrochloroform acts as a preservative.

The chief advantages of the said process may be summed up as follows: A very small quantity of antiseptic substance may be used for a large quantity of material to be treated, the said substance being if necessary completely eliminated from the finished product.

The substance moreover entirely prevents bacterial action from developing and assists diastatic action.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A process for industrially preparing and extracting utilisable nitrogenous derivatives and fatty substances by artificial digestion, applicable to fish and offal thereof, and generally to protein material of animal origin, consisting in first dividing (if necessary) the material to be treated, in intimately mixing with the said material in suitable proportions easily eliminated antiseptic volatile substances, for example nitrochloroform, the proportions of which depend upon the nature of the material treated, intimately stirring the material from time to time during the course of digestion, mechanically separating the various products produced during the course of digestion and eliminating the volatile antiseptic substances used.

2. In a process as set forth in Claim 1, the division of the products produced during the course of digestion into:

(a) animal skeleton matter, solid coarse material not converted by digestion and salts liberated by the latter;

(b) finely divided nitrogenous products;

(c) nitrogenous products in solution;

(d) fatty substances;

the elimination of the volatile antiseptic substances used being effected in each class by the combined action of vacuum and heat.

3. Products when obtained by the process claimed in any of the preceding claims.

Dated this 30th day of November, 1923.

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