Improvements in the manufacture of compounds for alimentary and medicinal purposes.

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PROVISIONAL SPECIFICATION.

Improvements in the Manufacture of Compounds for Alimentary and Medicinal Purposes.

I, JAMES YATE JOHNSON of 47 Lincoln's Inn Fields in the County of Middlesex Gentleman do hereby declare the nature of this invention (which has been communicated to me from abroad by C. F. Boehringer & Soehne of Waldhof near Mannheim in the Empire of Germany) to be as follows:—

This invention relates to improvements in the manufacturing process described in the Specification annexed to Letters Patent No. 818 dated 13th January 1893.

In the practical working of the process described in the said Specification for the production of an absorbable organic iron compound it has been found that by the introduction of an acid separation before the first precipitation of the iron albumen derivative a substance of a permanently uniform nature can be obtained with greater certainty.

The following is given as an example of the method of conducting the process according to this invention.

After the albumen solution has been heated upon a water bath with soda lye, tartrate of iron and tartrate of sodium solution (as described in the Specification hereinbefore referred to) for about 5 hours a current of steam is caused to pass through the liquid so as to blow up and agitate the latter at a temperature of about 96° centigrade. Small quantities of tartaric acid or hydrochloric acid or other suitable acid are then introduced without stopping the current of steam until a perfectly neutral reaction of the solution is obtained. After a few minutes additional quantities of acid are introduced until the solution gives a distinctly acid reaction.

The liquid being constantly agitated by the current of steam continually becomes clearer and the precipitate formed separates after a few minutes.

Directly the solution is completely clarified it is allowed to cool to 15° centigrade and filtered. The filtered solution is then heated with ammonia for about 48 hours at a temperature of about 92° centigrade and further treated as described in the said former Specification.

By means of this improved method of operating it is possible to separate or remove all parts of the solution of the iron albumen derivative which are not perfectly transformed in the said derivative and which may consist of albumen as well as of other intermediate products or substances.

The purified iron albumen derivative obtained by means of the improved process hereinbefore described is of a brown colour and contains from about 7 to 10 *per cent.* of iron which is not combined in the form of a salt. It is insoluble in acidulated water and alcohol but is readily soluble in slightly alkaline water. A neutral solution thereof does not coagulate when boiled.

When 20 cubic centimetres of an ammoniacal solution containing 0·06 grammes of the iron albumen derivative are mixed with one drop of a 50 *per cent.* aqueous solution of hydro-sulphuret of ammonium (Tresenius Qualitative Analysis 14th edition page 68) it does not change during the first three minutes but afterwards becomes gradually darker.

Dated this 18th day of August 1893.

J. H. JOHNSON & Co.,
47, Lincoln's Inn Fields, London, Agents.

[*Price* 8*d.*]

COMPLETE SPECIFICATION.

Improvements in the Manufacture of Compounds for Alimentary and Medicinal Purposes.

I, JAMES YATE JOHNSON of 47 Lincoln's Inn Fields in the County of Middlesex Gentleman do hereby declare the nature of this invention (which has been communicated to me from abroad by C. F. Boehringer & Soehne of Waldhof near Mannheim in the Empire of Germany) and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement :—

This invention relates to improvements in the manufacturing process described in the Specification of Letters Patent No. 818 dated 13th January 1893 granted to Charles Denton Abel on a communication from my foreign correspondents.

In the practical working of the process described in the said Specification for the production of an absorbable organic iron compound it has been found that by the introduction of an acid separation before the first precipitation of the iron albumen derivative a substance of a permanently uniform nature can be obtained with greater certainty.

The following is given as an example of the method of conducting the process according to this invention.

After the albumen solution has been heated upon a water bath with soda lye, tartrate of iron and tartrate of sodium solution (as described in the Specification hereinbefore referred to) for about 5 hours a current of steam is caused to pass through the liquid so as to blow up and agitate the latter at a temperature of about 96° centigrade. Small quantities of tartaric acid or hydrochloric acid or other suitable acid are then introduced without stopping the current of steam until a perfectly neutral reaction of the solution is obtained. After a few minutes additional quantities of acid are introduced until the solution gives a distinctly acid reaction.

The liquid, being constantly agitated by the current of steam, continually becomes clearer and the precipitate formed separates after a few minutes.

Directly the solution is completely clarified it is allowed to cool to, or about 15° centigrade and filtered. The filtered solution is then heated with ammonia for about 48 hours at a temperature of about 92° centigrade (1 part of ammonia solution of 30 *per cent.* NH_3 may be used for every 10 parts of albumen) and further treated as described in the said former Specification.

By means of this improved method of operating it is possible to separate or remove all parts of the solution of the iron albumen derivative which are not perfectly transformed in the said derivative and which may consist of albumen as well as of other intermediate products or substances.

The purified iron albumen derivative obtained by means of the improved process herein-before described is of a brown colour and contains from about 7 to 10 *per cent.* of iron which is not combined in the form of a salt. It is insoluble in acidulated water and alcohol but is readily soluble in slightly alkaline water. A neutral solution thereof does not coagulate when boiled.

When 20 cubic centimetres of an ammoniacal solution containing 0·06 grammes of the iron albumen derivative are mixed with one drop of a 50 *per cent.* aqueous solution of hydro sulphuret of ammonium (Tresenius Qualitative Analysis 14th edition page 68) it does not change during the first three minutes but afterwards becomes gradually darker.

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

In the manufacture of an iron albumen derivative as described in the Specification of Letters Patent No. 818 of 1893 introducing acid into the hot solution of the said derivative before the first precipitation of the same and thereby separating unchanged albumen and other intermediate bodies or extraneous matter and isolating and further purifying the iron albumen derivative substantially as hereinbefore explained.

Dated the 15th day of March 1894.

JOHNSONS & WILLCOX,
47, Lincoln's Inn Fields, London, Agents.

London : Printed for Her Majesty's Stationery Office, by Darling & Son, Ltd.—1894