Gommier Resin from Dominica.

between the two products could only be ascertained by a complete chemical investigation of the constituents of the two resins. Preliminary experiments made in the Scientific and Technical Department of the Imperial Institute have shown that the principal constituent of the gommier resin is a white crystalline substance probably identical with one of the constituents of elemi resin.

Commercial Valuation of Gommier Resin.

The principal purposes to which elemi resin is applied are the preparation of printing inks and the manufacture of spirit varnishes, although a small quantity is also used in medicine. Specimens of gommier resin were submitted to manufacturers of printing inks and to varnish makers, who both reported that the soft gommier resin would answer their purposes as well as elemi. Other samples were then submitted to brokers for valuation. They stated that the material was somewhat dirty, and would only be worth from 17*s.* to 18*s.* per cwt., as compared with 50*s.* to 55*s.* per cwt. obtainable for true elemi. This difference in price is probably to be accounted for by the fact that elemi is usually sold in this country in a comparatively fresh and soft condition, and that it is generally fairly free from dirt.

It is probable that gommier resin, if exported in a fresh and clean condition, would realise prices more nearly equal to those obtained for true elemi.

SALT FROM NORTHERN NIGERIA.

Two samples of salt were forwarded to the Imperial Institute by H.M. Acting Commissioner for Northern Nigeria, with the request that full information as to their commercial value might be obtained.

It was stated in the accompanying letter that the samples were obtained from the Muri Province of the Protectorate, but no information was given either regarding the deposits furnishing these products, or as to whether the samples consisted merely of the crude material as collected or of salt prepared from this by native methods.

The samples were analysed in the laboratories of the Scientific and Technical Department of the Imperial Institute, with the following results:—

Salt from Northern Nigeria.

Specimen No. 1, labelled "Native salt from the Awe Province of Muri."

This consisted of coarse crystals, which were moist and slightly greyish-brown in colour. The material had a purely saline taste, and was not bitter.

Specimen No. 2, labelled "Native salt from Azara Province of Muri."

This closely resembled No. 1 in appearance and properties.

Composition of samples.

	Number 1.		Number 2.	
	As Received.	Dried at 100° C.	As Received.	Dried at 100° C.
	Per cent.	Per cent.	Per cent.	Per cent.
Sodium chloride, NaCl	85·37	96·16	85·49	95·76
Potassium chloride, KCl	—	—	0·61	0·69
Calcium chloride, $CaCl_2$	2·39	2·69	2·35	2·63
Magnesium chloride, $MgCl_2$ ...	0·65	0·73	0·69	0·78
Sulphates soluble in water	trace	trace	nil	nil
Matter insoluble in water	0·38	0·43	0·15	0·17
Moisture, by difference	11·21	nil	10·71	nil

These results show that the samples contained an unusually high proportion of calcium chloride, and as a consequence of the presence of this impurity they were abnormally moist, since calcium chloride has the property of absorbing moisture from the atmosphere and retaining it. The other impurities contained in the samples were present only in small quantities, and were such as are frequently found in commercial salt.

Since calcium chloride is very soluble in water it was obvious that these samples of salt could be greatly improved by solution in and re-crystallisation from water, and it was found that by a single treatment of this kind perfectly white crystals of salt could be obtained from both samples. The purified product so made from No. 1 contained only 0·36 per cent. of calcium chloride, and that from No. 2, 0·47 per cent. of this impurity, the rest being practically pure salt. These quantities of impurity are not in excess of those found in many of the purified salts of commerce.

Crude, impure salt of the quality represented by these samples would be of very little value in commerce, but the refined products, which could be obtained by dissolving these salts in hot water, allowing the solutions to deposit suspended insoluble matter, and then crystallising out the salt, would be similar in composition to the white salt of European trade,

Salt from Northern Nigeria.

which at present has the average value of 16*s.* to 17*s.* per ton f.o.b. at an English port.

In 1901 salt to the value of 4,102*l.* was imported into Northern Nigeria, and in 1902 the value of the imports of this commodity into the Protectorate rose to 7,965*l.*; it is, therefore, a matter of great importance to the country that an investigation of the extent of the salt deposits in the Province of Muri should be carried out, and the possibility, or otherwise, of establishing a salt industry in that district ascertained.

STARCH PREPARED FROM THE BREAD-FRUIT TREE IN THE SEYCHELLES.

Two small samples of powder prepared from the bread-fruit tree were forwarded to the Imperial Institute by the Governor of Seychelles, with a request that a report upon their composition and commercial value should be furnished. It was stated that the samples were prepared in the island of Praslin, near Mahe, and a copy of a report by Dr. Denman, the chief medical officer, upon a previous sample of the powder was enclosed. From the latter it appeared that the powder was practically pure starch.

The two specimens were labelled as follows:—

(I.) "*État naturel de la poudre*," and (II.) "*La même poudre tamisée.*"

(I.) "*État naturel de la poudre.*"

This specimen consisted of about 200 grams of a whitish powder, which exhibited a faint yellow tinge; it contained numerous small hard lumps, but these could be readily reduced to a fine powder. The sample possessed a slight odour, resembling that of arrowroot, and had a starchy taste.

(II.) "*La même poudre tamisée.*"

This was a very fine whitish powder, which also exhibited a faint yellow tinge. It was perfectly free from lumps, possessed the same odour and taste as the preceding specimen, and closely resembled fine wheat flour in appearance. The sample weighed about 150 grams.