largest ones *g, h, i,* and then passing by the canals *n* into the other basins *k, k, l, l.* The flow of the water from one set of basins to the other is regulated by the sluices *e, e, e. As* it passes from one set of basins to another it becomes more and more concentrated, till at last in the basins *m, m* the salt deposits. The mother-liquor or

“bittern” is then run off into *p,* and thence into the sea. In France it is often stored as already stated for future treatment. In case of heavy rain, the already concentrated water is run into the covered cisterns *s*, *s,* which serve to hold it till the return of fine weather.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table I.—*Percentage Analyses of Sea Salts from Well-knowm Localities.* | | | | | | | | | | | | | |
|  |  |  |  |  |  |  | St  Martin. | Marais | Island of Oléron. | Salines du Midi. |  |  |  |
|  |  | St Ubes. | |  |  | Salants de | Cadiz. | S. Felice Trapani. | |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | l'Ouest. |  |  |  |
| Authority | Henry. |  | |  | Karsten. |  | Henry. | Enquête | Henry. | Enquête | Watts. |  | |
|  |  |  |  |  | sur les Sels. | sur les Sels. |  |  |
| Sodium chloride.... | 96·00 | 95·19 | 89·19 | 95·86 | 92·46 | 96·50 | 95 95 | 87·97 | 96·40 | 95·11 | 9211 | 95·91 | 96·05 |
| Magnesium chloride | 0·30 |  |  | 0·24 | 0·55 | 0·32 | 0·35 | 1·58 | 0·20 | 0·23 |  | 0·46 | 0·50 |
| Magnesium sulphate Sodium sulphate.... | 0·45 | 1·69 | 6·20 | 0·35 | 0·66 | 0·25 | 0·60 | 0·50 | 0·45 | 1·30 | 6·99 | 0·40 | 0·51 |
| Calcium sulphate... | 2·35 | 0·56 | 6·81 | 1·30 | 2·28 | 6·88 | 1·90 | 1·65 | 1·95 | 0·91 | 0·33 | 0·49 | 0·45 |
| Water |  |  | 0·20 | 2·10 | 3·10 | 1·95 |  | 7 50 |  | 2 35 | 6·30 | 2·58  0·16 | 2·42 |
| Insoluble matters...  ] Loss | 0·90 | 2·45  0·11 | 3·60 | 015 | 0·95 | 0·10 | 1·20 | 0·80 | 1·00 | 0·10 | 0·27 | 0·07 |
|  |
|  |  |  |  |  |  |  |  |  | ... |  |  |  |

*Rock-Salt.—*This appears to occur in almost every formation, except in the Primary rocks, strictly so called. The oldest deposit of which the age may be considered to have been anything like precisely determined may be said to be the great salt range of the Punjab, which is regarded as belonging to the Permian ; and that lately discovered at Middlesbrough in Yorkshire, immediately overlying the magnesian limestone, may be probably referred to the same period. In the northern counties of England there are frequent instances of brine springs rising from the Carboniferous and contiguous formations. The Cheshire and Worcestershire salt-beds are by some attributed to the Permian ; more generally, however, they are referred to the Trias. Those of West New York and Gooderich (Canada) are said to belong to the Salina period of the Upper Silurian. The deposits of the Vosges, Salzburg, and others of central Germany and Austria are considered to belong to the Trias; that of Bex in Switzerland to the Lias. Those of Wieliczka in Poland, Cardona in Spain, and some Algerian formations are admitted to be Creta­ceous. Those of Bayonne, Dax, and Camarade, in the Pyrenees, are probably Tertiary, while the Dead Sea, Lake Elton in Astrakhan, the Bitter Lakes of the Isthmus of Suez, the Kara Boghaz on the shores of the Caspian, the Limans of Bessarabia south of Odessa, the Runn of Cutch, and certain formations of the Sea of Azoff, &c., are instances of salt formations now in actual progress. The frequent association of bitumen and petroleum with rock-salt and brine is one of the most noticeable features in the geology of those substances, and seems to point to some unknown condition of the formation of the two first named. The Dax salt is close to the bitumen deposits of Bastenès and Gaujac. Borings made at Dax, as well as at Salies about 20 miles distant (where also salt exists), gave vent to an efflux of inflammable gas which continued for several weeks, and the water of several springs in that neighbour­hood is tainted with petroleum. Bitumen and petroleum occur near Volterra in Tuscany, where a large deposit of salt is being worked. In Walachia the two occur in the same formation. In the United States of America and in the south of Russia petroleum and brine are found in many places either actually associated or in near proximity ; petroleum has recently been discovered not far from the salt deposits of Hanover, and one of the beds of rock-salt at Nancy is strongly coloured by bitumen, while almost all rock-salt has a more or less perceptible bituminous odour when struck or rubbed. In the province of Sze- chuen, China, are some remarkable salt springs, where the brine is accompanied by such an efflux of inflammable gas that the latter serves as fuel for its evaporation ; and other springs accompanied by the same phenomenon exist

in the same region. In fact, instances without end might be cited of the two occurring together, and it would appear that petroleum for some mysterious reason can only be formed in presence of salt.

The chief rock-salt districts of Europe may be classified as follows :—(1) the Carpathians; (2) Austrian and Bava­rian Alps; (3) West Germany ; (4) Vosges; (5) Jura; (6) Swiss Alps ; (7) Pyrenees and the Spanish or Celtiberian Mountains ; (8) the British salt deposits ; (9) isolated deposits and springs in Russia, Turkey, Italy, &c.

The Carpathian district may be subdivided into the Moldo- Walachian, Transylvanian, Galician, and Hungarian sections. They form probably the richest and most extensive of the European salt fields and by them alone the entire continent might be supplied for ages. The Transylvanian and Walachian mines are specially numerous and rich. Thousands of tons of salt, in the form of brine from the springs which are common throughout tho country, are allowed to run to waste, no important factory existing in the country for its evaporation. The rock is in fact in itself so pure that simply ground it meets all requirements of public consumption. In Galicia the principal mines and those of most historical interest are at Wieliczka and Bochnia. The former, which is justly the most celebrated in the world, is situated 9 miles from Cracow and has been worked continuously for six hundred years. The mass of salt is calculated to be 500 miles long, 20 miles broad, and 1200 feet thick. It is on the north-west side of a ridge of hills, an offset of the Carpathians. The salt is stoped out in longitudinal and transverse galleries, and large vaulted chambers, supported by massive pillars. Explosives are not used in this or any of the other mines of the district. The salt is sold just as it comes from the mine, or else finely ground and packed in casks or sacks. The mine is divided into four levels, and is 284 yards deep and 1 mile 1279 yards long by 830 yards wide. All the grinding and packing is done within it.

It is stated that the collective length of the galleries and chambers is no less than 30 English miles and the total yield 55,067 tons per annum. These mines employ from eight hundred to one thousand persons, many of whom live permanently under ground ; the lower levels contain streets and houses and constitute a complete village. Travellers have given glowing descriptions of the crystal vaults, sparkling aisles, and fairy palaces of this mine. The salt is greyish, and somewhat resembles granite in appearance.

In the well-known district of the Austrian and Bavarian Alps the mine of Salzburg (Salzkammergut) is perhaps the most familiar. The Austrian portion of the district includes the towns of Aussee, Ischl, Hallstadt, and Hallein, and the Bavarian includes Berchtesgaden, Reichenhall, Traunstein, and Rosenheim. In the last-named salt is made from brine conveyed in pipes from Berchtesgaden, passing by Reichenhall, 15 miles in all, with a total fall of 1552 feet. There arc also large salt works at Hall near Innsbruck. Here, as in the Carpathian region, most of the rock- salt is sold merely ground, or in lumps, and the trade is, as in other parts of Austria-Hungary, a strict Government monopoly, , producing an annual revenue of two and a quarter to two and a half millions sterling.

The German mines are numerous ; they extend north and south from Segeberg in Holstein to Sulz on the Neckar, and east and west from Kreuznach to Halle. Brine springs and small workings lie scattered all over the country. But two formations of special importance are Stassfurt in Saxony and the Lüneburg Heath in