1886, it was determined to widen the existing canal so as to accom­modate the increased traffic, and the works are now in progress. Originally constructed by French capital, the Suez Canal has passed more and more into the financial ownership as well as under the political protection of England. In 1875 the British Government purchased 176,602 shares from the khedive of Egypt at the price of £3,976,582, or, including commission and expenses, £4,076,622, and exchequer bonds were issued to the value of £4,000,000. By opening up a passage by which the faunal forms of the Red Sea anil of the Mediterranean may respectively advance north and south into regions from which they have hitherto been excluded, the canal has produced some curious results, which have been lately investigated by Dr Conrad Keller of Zurich (“ Fauna im Suez-Kanal u. Diffusion de Mediter. u. Eryth. Thierwelt,” in *Neue Denkschriften cl. allg. schweizer Ges. f. Naturwiss.,* Zurich1883). Deep-sea forms are, of course, prevented passing by the shallowness of the canal ; and the sandy nature of the soil, the large lakes, the currents, the disturbing influence exerted by the continual movement of vessels, and the excessive saltness of the water all tend to limit and retard the progress of even those forms most adapted to make their way through such a channel. The salinity of the water is much greater than that of the Mediterranean or the Red Sea. This is due mainly to two causes,—the rapid evaporation to which the water in the canal is subjected and the gradual melting of the deposits of salt (the result of previous evaporation in distant ages) in some of the depressions through which the canal is carried. In the Bitter Lakes, for example, it was found in 1872 that on an average each cubic mètre of water contained 156·42 lb of salt, or about three times as much as ordinary sea water. A certain num­ber of forms common to the Bed Sea and the Mediterranean appeal’ to have migrated from their original homes when in Quaternary times the isthmus was still a lagoon. These being discounted, the following remain as the result of the recent connexion established between the seas : (1) from the Mediterranean *Pholas candida* (as far as Ismailia), *Solen vagina, Sphæroma serrata* (to the south of Timsah Lake), *Cardium edule, Gammarns* sp. (to the nearer end of the Great Bitter Lake), *Solea vulgaris, Umbrina cirrhosa, Ascidia intestinalis,* and *Labrax lupus* (to the Red Sea); (2) from the Bed Sea seventeen forms were found journeying, but one only, *Mytilus variabilis,* had got out into the Mediterranean proper ; *Ostracion cubicus* and *Caranx macrophthalmus* had just got *en route,* and *Pristipoma stridens* (the curious fish that utters a cry when caught), *Mactra olorina,* and *Cerithium scabridurn* were found in Lake Menzaleh. This lake seems to prove in the meantime an obstacle to the passage of eight other species.

The following figures are in continuation of the table in vol. iv. p. 792.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Year. | No. of Vessels entering. | Gross  Tonnage. | Receipts. | Year. | No. of Vessels entering. | Gross  Tonnage. | Receipts. |
| 1875 | 1494 | 2,940,708 | £1,204,387 | 1881 | 2727 | 5,794,401 | £2,050,974 |
| 1876 | 1457 | 3,072,107 | 1,229,157 | 1882 | 3198 | 7,122,125 | 2,421,835 |
| 1877 | 1663 | 3,418,949 | 1,339,617 | 1883 | 3307 | 8,051,307 | 2,633,912 |
| 1878 | 1593 | 3,291,535 | 1,272,435 | 1884 | 32S4 | 8,319,967 | 2,495,124 |
| 1879 | 1477 | 3,236,942 | 1,214,444 | 1885 | 3624 | 8,985,411 | 2,48S,297 |
| 1880 | 2026 | 4,344,519 | 1,629,577 | 1886 | 3100 | 8,183,313 | 2,309,218 |

In 1883 10 francs 50 cents were charged per ton (net tonnage), and pilotage dues amounted to 70 cents per ton on an average ; on 1st July 1884 pilotage dues were abolished ; and in 1885 the transit dues were reduced to 9 francs 50 cents per ton.

SUFFOLK, the most easterly county in England, is bounded E. by the North Sea, N. by Norfolk, W. by Cam­bridge, and S. by Essex, the boundaries being chiefly the sea and rivers; it has somewhat the shape of a half moon. Its greatest length north to south from Yarmouth to Land- guard Point is about 50 miles, and its average length about 30 ; its greatest breadth from east to west is about 55 miles. The total area of the county is 944,060 acres, or 1475 square miles.

The principal geological formations are the Chalk and the Tertiaries, but they are frequently overlaid by drift. The surface is for the most part flat or slightly undulat­ing. In the extreme north-west round Mildenhall it joins the fen country. The fen land is bordered by a low range of chalk hills extending from Haverhill by Newmarket and Bury St Edmunds to Thetford. The Chalk extends eastwards, but towards the south passes under the London clay and crag, which adjoins the mouths of the principal rivers and extends from Sudbury by Ipswich to Aldeburgh. The easterly slopes of the Chalk are also overlaid by beds of clay, as well as by post-Glacial gravels, in which flint

implements and other indications of the presence of pre­historic man have been found. The most interesting deposits are, however, those of the crag of the late Miocene and Pliocene periods, resting on the London clay, or, where it overlaps, on the Chalk. At the base of the crag resting on the London clay is the famous Suffolk bone bed. The coast-line has a length of about 52 miles, and is comparatively regular, with only slight convexities towards the sea, the bays being generally shallow and the headlands rounded and only slightly prominent. The estuaries of the Deben, Orwell, and Stour are, however, of some length. The shore is generally low and marshy, with occasional clay and sand cliffs. The rivers flowing northwards are the Lark in the north-west corner, which passes in a north-westerly direction to the Great Ouse in Norfolk ; the Little Ouse or Brandon, also a tributary of the Great Ouse, flowing by Thetford and Brandon and forming part of the northern boundary of the county; and the Waveney, which rises in Norfolk and forms the boundary between that county and Suffolk, from Palgrave till it falls into the mouth of the Yare at Yarmouth. The Waveney is navigable from Bungay, and by means of Lake Lothing also communicates with Lowestoft. The rivers flowing in a south-easterly direction to the North Sea are the Blyth ; the Alde or Ore, which has a course for a long distance parallel to the seashore, and has its port at Orford ; the Deben, from Debenham, flowing past Wood- bridge, up to which it is navigable ; the Orwell or Gipping, which is navigable to Stowmarket, whence it flows past Needham Market and Ipswich ; and the Stour, which forms nearly the whole southern boundary of the county, receiving the Brett, which flows past Lavenham and Had- leigh ; it is navigable from Sudbury and has an important port at Harwich. The county has no valuable minerals. Cement is dug for Roman cement ; and lime and whiting are obtained in various districts.

*Agriculture.—*Suffolk is one of the most fertile counties in Eng­land. In the 18th century it was famed for its dairy products. The high prices of corn during the wars of the French Revolution led to the extensive breaking up of its pastures, and it is now one of the principal corn-growing counties in England. There is con­siderable variety of soils, and consequently in modes of farming, in different parts of the county. Along the sea-coast a sandy loam or thin sandy soil prevails, covered in some places with heath, on which large quantities of sheep are fed, and interspersed with tracts, more or less marshy, on which cattle are grazed. The best land adjoins the rivers, and consists of a rich sandy loam, with patches of lighter and easier soil. In the south-west and the centre is much fine corn land, having mostly a clay subsoil, but not so tenacious as the clay in Essex. In climate Suffolk is one of the driest of the English counties, the rainfall being only half that of the counties in the west. Towards the north-west the soil is generally poor, consisting partly of sand on chalk and partly of peat and open heath.

According to the agricultural returns for 1886, 780,448 acres or nearly five-sixths of the total area were under cultivation, 363,641 being under corn crops, 120,256 under green crops, 94,893 clover and rotation grasses, 174,970 permanent pasture, 19 flax, 57 hops, and 26,612 fallow. Wheat and barley are the most important of the corn crops, having an area of 118,873 and 151,630 respect­ively. Of green crops only 2452 were under potatoes, while 55,434 were under turnips and swedes, 36,211 under mangold, 852 under carrots, 4100 under cabbage, and 21,207 under vetches,—figures which indicate that much attention is paid to the winter feeding of cattle. Horses in 1886 numbered 42,617, of which 32,262 were used solely for purposes of agriculture. The breed known as Suffolk punches is one of the most valued for agricultural purposes in Eng­land (see Agriculture, vol. i. p. 385). Cattle numbered 70,695, of which 23,652 were cows and heifers in milk or in calf, and 17,322 other cattle two years old and above. The breed native to the county is a polled variety, on the improvement of which great pains have been bestowed in recent years. The old Suffolk cows, famous for their great milking qualities, were of various colours, yellow predominating. The improved are all red. Much milk is now sent to London, Yarmouth, &c. Many cattle, mostly imported from Ireland, are grazed in the winter. The sheep are nearly all of the black-faced improved Suffolk breed, a cross between the old Norfolk horned sheep and Southdowns. Sheep numbered 433,986, of which 230,954 were one year old and above. Suffolk is famous