

tricks of balancing, and of jugglers who do the "butterfly trick," which has lately been so popular among ourselves, elicit great applause. So popular also are ballet performances, that even the priests, in some of the great temples, engage in sacred dances to add to the "legitimate" attractions of the places of worship. Fencing is a favourite amusement, and is taught to women.

The public baths where men and women conduct their ablutions in the sight of all the world, and the tea-houses; at which women wait on the guests, are two features of Japanese life which are very strange to European eyes.

The town of Yeddo has a very striking physiognomy, so to speak. To the south are the suburbs on the shores of the bay; in the centre the citadel and the dwellings of the nobility; to the south-east, the trading town; to the east, the quays and bridges of the great river, and on the left bank the industrial city of Hondjo; to the north lie the temples, the fields where fairs are held, the theatres and public places of amusement. The western quarters are occupied by the general city population; and the suburbs of the north and west are full of verdure and flowers.

Yeddo has been calculated to have 1,800,000 inhabitants, although as an important city it only dates from the beginning of the 17th century. It is the northern termination of the great military road, the Tokaido, which traverses the empire from Nagasaki to Yeddo, near to which are built towns, villages, and many houses of the nobility, and along which the Daimois pass when proceeding to their compulsory residence in Yeddo. The modes of travel in use are either horseback, or palanquins carried by men. These latter are of two kinds; the norimon, closed on all sides, and in use among the upper classes, and the cango, light in construction, open at the sides, and used by the common people. As the Daimois pass along with their two-sworded retinue, all passengers give way to them, those that are on horseback dismount, and all stand bending low till the great man has gone on his way. The refusal of foreigners to submit to this fashion has led to the murder of more than one.

Yeddo is a busy town. Cotton and silk manufactures of a delicate kind, the making of porcelain, dyeing, tanning, the working in metals, the carving of stone, wood, and ivory, the manufactures of paper and of leather are all carried on in the town. (An illustration of the delicate silk embroidery which is made by the Japanese is given in the accompanying woodcuts, which represent silken dress ornaments.) In the suburbs, especially of the northern part, the gardens of the florists, the rural tea-houses, and the rice-fields are found. Minor industries—those of the makers of chop-sticks, of toothpowder, of dolls, of makers of mats, basket-work, and boxes, down to that of the humble rag picker—are to be found exercised in the small shops, or in the streets of Yeddo. The streets are full of life. The trades are carried on by the artisans, the jugglers and acrobats exercise their skill, men, women, and children pass along, bent on amusement or pleasure; here an enormous artificial fish, or a flag displayed at a house, announces the birth of a child; there a wedding procession takes its way; a Daimio passes, and all bow to the ground; an alarm of fire from one of the many watchtowers of the city calls out the firemen; the watch goes on its rounds; beggars exercise their arts as a kind of sacred trade—in a word, all the complicated machinery of a busy town life is to be seen in active operation, in what was the great capital of the Tycoon.

A jealous exclusion of foreigners prevailed in Japan for more than two centuries and a half; the only favoured people being the Dutch, who were permitted to build a small factory at Decima, and to send thither annually two trading vessels. The arrival of foreigners and their trade were regarded by the Tycoon and the nobles with dislike, chiefly because of the possibility that the introduction of new ideas might upset the old order of things; and the residence of foreign Ministers in Yeddo was rendered so uncomfortable, and

even dangerous, that the legations settled in Yokohama as their permanent place of residence.

Recent events have effected a great change in the government of Japan. The Mikado, the theocratic emperor, has abolished the office of Tycoon. He has left his sacred city, and established himself, temporarily at least, in Yeddo, where the legations are in greater security than before. The export of tea and silk, already great, is increasing: and it is possible that Japan, so long isolated, may in time resume her relations with the outer world, and become, as her early records show her to have been, a busily trading, progressive nation.

It will be seen from the foregoing notice that M. Humbert's volumes contain an immense mass of valuable information as well as exquisite illustrations and lighter matter.

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#### FOOD OF OCEANIC ANIMALS

THE receipt of an interesting paper by Professor Dickie, entitled "Notes on range in depth of marine Algæ," lately published by the Botanical Society of Edinburgh, induces me to call the attention of physiologists to the fact, that plant-life appears to be absent in the ocean, with the exception of a comparatively narrow fringe (known as the littoral and laminarian zones), which girds the coasts, and of the "Sargasso" tract in the Gulf of Mexico.

During the recent exploration in H.M.S. *Porcupine* of part of the North Atlantic, I could not detect the slightest trace of any vegetable organism at a greater depth than fifteen fathoms. Animal organisms of all kinds and sizes, living and dead, were everywhere abundant, from the surface to the bottom; and it might at first be supposed that such constituted the only food of the oceanic animals which were observed, some of them being zoophagons, others sarcophagons, none phytophagons. But inasmuch as all animals are said to exhale carbonic acid gas, and on their death the same gas is given out by their decomposition, whence do oceanic animals get that supply of carbon which terrestrial and littoral or shallow-water animals derive, directly or indirectly, from plants? Can any class of marine animals assimilate the carbon contained in the sea, as plants assimilate the carbon contained in the air?

Not being a physiologist, I will not presume to offer an opinion; but the suggestions or questions which I have ventured to submit may perhaps be worth consideration. At all events the usual theory, that all animals ultimately depend for their nourishment on vegetable life, seems not to be applicable to the main ocean, and consequently not to one-half of the earth's surface.

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#### GOLD DIGGERS IN THIBET

THE Thibetan gold-field of Thok-Jalung in lat. 32° 24' 26" and long. 81° 37' 38" was visited by the pundits employed by the G. T. Survey, in 1867 (August). The camp was pitched in a large desolate plain of a reddish brown appearance, the tents stand in pits seven or eight feet deep for protection against the cold wind, the elevation being 16,330 feet, yet the diggers prefer to work in the winter, when nearly 600 tents are to be found there; the soil when frozen does not "cave in." They have no wood, but use dried dung for fuel, and the water is so brackish as to be undrinkable until frozen and remelted. They live well, taking three meals a-day of boiled meat, barley cakes, and tea stewed with butter. They will not use the Himalayan tea, as too heating and only fit for poor folks.

The gold is obtained from an excavation a mile long, twenty-five feet deep, and ten to two hundred paces wide, through which a small stream runs; the implements used are a long-handled kind of spade, and an iron hoe.