15. Admiralty lists of lights throughout the world (5691 lights; of these, 838 are in the British Islands), comprised in 10 pamphlets; corrected to 31st December 1884.

The following 'Sailing Directions' were prepared for publication at the close of 1884:—North Sea Pilot, Part II., 4th edition; North Sea Pilot, Part IV., 4th edition; Scotland—West Coast, Part I., 3rd edition; Scotland—West Coast, Part II., 3rd edition; Ireland—South-east and North Coasts, Part I., 3rd edition; Danish Pilot, 2nd edition; Mediterranean Pilot, Vol. I., 2nd edition; Mediterranean Pilot, Vol. II., 2nd edition; Newfoundland Pilot, Supplement; Nova Scotia, South-east Coast, and Bay of Fundy, 3rd edition; Africa Pilot, Part I., Supplement; Bay of Bengal Pilot (new work); China Sea Directory, Vol. I., 3rd edition; South America Pilot, Part I., 3rd edition; South America Pilot, Part II., 8th edition; Pacific Islands (Western groups), Vol. I. (New work); Pacific Islands (Central groups), Vol. II. (New work); Pacific Islands (Eastern groups), Vol. III. (New work); and Vancouver Island Pilot, 2nd edition.

Letters from Colonel Prejevalsky.

We are indebted to M. Venukoff for an extract from a Russian journal giving a continuation * of Colonel Prejevalsky's interesting letters on his important expedition in Central Asia. The following relates to his journey between Lob-nor and Khotan †:—

Oasis of Chira,‡ 80 versts (53 miles) to the west of Khoten.
10th August, 1885.

Having reached, at the end of January, the shores of Lob-nor, we passed nearly two months here, engaged in observing the flight of birds and studying the natives. These last-named received us very heartily and were a hundred times more frank than on the occasion of our first visit to the lake in 1876, when we appeared here in the company of the companions of Yakub-beg of Kashgar.

The people of Lob-nor, whose numbers amount to 400 souls of both sexes, live in reedy enclosures engaged in fishing and snaring wild duck, some in tending cattle, and a few in agriculture, and are under the government of Kunchikan-beg.§ This excellent man enjoys the entire love of his subjects, for whose welfare he is as anxious as a natural father. Though he himself has lived in abject poverty ever since the Chinese by various artifices deprived him of his herds and six chests of silver (about 800 roubles) which he had amassed during his long government of Lob-nor. The payments were particularly heavy, so Kunchikan-beg informed us, to obtain the rescission of the order to wear pig-tails. Such a novel custom frightened the Lob-norians so greatly that Kunchikan-beg rode specially to Kurla and gave

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* *Vide* 'Proceedings R. G. S.,' *ante*, p. 167.

† Translated by E. Delmar Morgan.

‡ Chira is marked on the map showing Mr. Johnson's routes in 'Journal R. G. S.,' vol. xxxvii. It lies south-west of Ilchi, and about half-way between that place and Kiria.—M.

§ A full account of Lob-nor was presented by me in 1877 to the Geographical Society, and printed in a separate pamphlet under the title of 'From Kulja beyond the Tian Shan to Lob-nor.' To avoid repetition, I will in the present letter confine myself to a brief record of our stay there. [See English edition, 'From Kulja across the Tian Shan to Lob-nor.' Translated by E. Delmar Morgan. London, 1879.—M.]

the Chinese his remaining money, and then could hardly obtain leave that their heads might be shaved as formerly.

Externally the Lob-norians present a mixture of the Mongolian and Turkish races. Their ancestors, who bore the name of *Kavria*, at one time lived in the town of Lob, and extensive ruins of this city may still be seen on the river Jahansai-daria, 30 versts (20 miles) to the south of Lob-nor. At the end of the fourteenth century of our era, the town of Lob was destroyed and its inhabitants exterminated.* Only a small number of them succeeded in saving themselves by hiding in the reeds of Lob-nor where they now dwell; and besides these a few dozen families migrated to the neighbourhood of Keria,† Khotan, and Ak-su. At first the Lob-norians were completely isolated, and only forty years ago, when a Khotan colony was founded at the village of Chargalyk, did they begin by degrees to engage in husbandry and partly to emerge from their state of complete savagery.

The lateness of spring this year delayed the principal flight of water-fowl to Lob-nor. These certainly appeared in small numbers, both duck and swans, by the end of January, but they again disappeared somewhere, perhaps owing to the return of cold weather. But hardly did it become warm, when from the 12th of February an uninterrupted flight began of geese and duck of various kinds. Flock after flock followed one after the other, now flying close to the ground, now high in the clouds; all coming from the south-west, from the neighbourhood of Khotan and Keria. In the meridians of these oases the birds from India can more easily fly across the difficult and cold plateaus of Tibet. The experience of ages has of course taught the winged wanderers that this is the easier, though more circuitous route.

Having reached Lob-nor, the flocks descended swiftly to the ice to rest, while others flew along the lake seeking open water. But of this latter in the middle of February there was but very little, so that the ducks were obliged to keep to the narrow occasional openings in the ice-floes. Here the birds assembled by thousands in each, while small flocks and single birds kept flying over the reeds like flies in every direction. To an ardent sportsman this abundance of game was an interesting sight, particularly as they were little frightened. Our daily sporting excursions were unusually successful; we dragged whole bags full of geese and ducks to camp, and with these supplied all our party with provisions, bestowing what we did not require for ourselves on the Lob-norians.

This fabulous quantity of duck continued at Lob-nor during the whole of the latter half of February. With the first days of March these birds quickly flew away towards the north, so that not a tenth part was left. Meanwhile, others of later kinds began to appear, likewise to follow in the direction of the wide Siberian valleys and summer there.

The warmth of spring began rapidly to increase from the latter half of February, nevertheless the Tarim did not open till the 27th of that month, and Lob-nor was not completely free from ice till the middle of March, when the midday temperature reached + 30° Cels. (86° Fahr.) in the shade. At the same time strong gales began which lasted till June. These violent winds came exclusively from the north-east,

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* According to local tradition, the destruction of Lob occurred three years before Toghluk-Timur-Khan accepted Muhammadanism. [The history of Mirza Haidar, called the Turikh-i-Rashidi, in describing the great plain of Eastern Turkistan, says, "Formerly there were several large cities in this plain; the names of two have survived, *Lob* and *Kank*, but of the rest there is no trace or tradition, all is buried under the sand. —Yule's 'Marco Polo,' 2nd ed., vol. i. p. 201.—M.]

† Keria or Kiria was, according to Mr. Johnson's information, nine marches, estimated by him at 154 miles, from Charchan, and 69 miles, which he actually traversed, from Ilchi or Khotan.—'R. G. S. Journal,' xxxvii. pp. 14, 41.—M.

from the colder parts of the high Gobi, and invariably brought with them thick clouds of dust which filled the atmosphere. Even after the violence of the tempest had abated, this dust remained suspended in the air, obscuring from view the whole horizon. A dust-charged atmosphere is indeed a characteristic of the basin of the Tarim, while a clear blue sky occurs but very rarely. This dust, peculiar to, though not so abundant in other parts of Inner Asia, as it sinks down upon the ground, forms that remarkable and highly fertile deposit which is known as "loess," and occurs sporadically over an enormous extent of country between the Caspian Sea and Pacific Ocean.

On the 20th March we left Lob-nor and took the direction of the oasis of Cherchen (Charchan), viâ the village of Chargalyk, a distance of 373 versts (249 miles).* The last third part of this way lies up the Cherchen-daria, which flows from the borders of the Tibetan mountains. These mountains rise as an unbroken, gigantic wall, margining the whole plateau of Tibet from the head-waters of the Hoang-ho to the Karakorum. In their eastern part they are known under the name of Nan-shan, in their centre, Altyn-tagh. Beyond, towards the south-west from the sources of the Cherchen-daria, this range has no general name among natives, and I christened it "Russian" in the region between the Cherchen and Keria rivers.

The soil of the desert near the borders of the Tibetan mountains is composed of bare pebbles and shingle; beyond lie shifting sands which cover the enormous enclosed area of the Tarim basin. These sands present a confused medley of heaps, hillocks, and banks, interspersed with hollows and ravines. There is neither water, vegetation, nor animal life here. There may be, however, in the midst of the sandy wastes an occasional spring to form small oases, but such spots are absolutely inaccessible to human beings.

The eastern limit of the sand-dunes is the course of the Cherchen-daria, along which, as already stated, our route lay. Unlike other rivers of the Tarim basin, which form for themselves deep, trough-shaped channels, the Cherchen has not enough strength to furrow a deep bed, but flows in wide and ever-changing reaches along a soft sandy bottom. The current is very rapid, but the depth, except in the pools, is small; the water is exceedingly dirty. Notwithstanding this, fish of five different kinds are abundant; one of these attains a length of 4 feet, and a weight of 33 lbs.

The banks of the Cherchen are margined with a broad belt thinly covered with vegetation. Here the only tree growing is the variegated poplar, or, as the natives call it, "tugrok," reaching a height of 30 to 40 feet, with a thickness of stem of 2 to 3 feet in diameter. This tree has a crooked deformed growth, its bark is often cracked and hangs down, always covered with loess. When fractured, instead of sap exuding, there is a white saline crust. Among the bushes on the Cherchen, the most common are the tamarisk, myricaria, and a kind of kali; in smaller numbers were bushy growths of five other species. Reeds are everywhere abundant along the bank, and among herbaceous plants we occasionally saw Compositæ, astragalus, and wild asparagus. All these bushes and herbs were thickly covered with loess dust, so that one could not touch them without making one's self in a mess. Moreover the soil, both among the bushes as well as in the poplar woods, is bare loess and clay mixed with sand, now covered with a tolerably hard saline crust, now as loose as ashes. Everywhere under the trees were scattered boughs broken off by the storm, and heaps of dry leaves, which gave out a ringing metallic noise when driven before a strong wind. In a word, the landscape was desolate in the extreme, even in spring—in the first half of April. Notwithstanding the great heat, there was hardly any verdure visible except

* Only 115 miles in Mr. Johnson's route vii. already referred to.—M.

in places where the shoots of reeds were forcing their way to the surface, and the poplar and elæagnus were opening their buds. Instead of flowers and butterflies, scorpions were crawling over the ground, and in calm weather clouds of gnats and mosquitoes disported themselves. Neither was the atmosphere any better. Here a thick dust brought by frequent gales constantly filled the air, shrouding the distant horizon and imparting a yellowish grey tint to surrounding objects. The sky too was almost always cloudy, and the sun, if it did come out, looked like a red disc, though its rays scorched us as mercilessly as ever.

Animal life on the Cherchen-daria was also poor. Among the larger beasts we met here with the antelope (*kara sult*), and more rarely with large deer (*Cervus elaphus*) and wild boar. Besides these were wolves, foxes, hares, and small rodents. Among birds, those most frequently seen were the saksaul jay, the saksaul sparrow, woodpeckers, shrikes, sand-swallows, and hoopoes, with an occasional pheasant. Water-fowl and waders were scarce along the river, for here there are no reedy lakes and other places where they like to rest, feed, and build their nests. Even in the full warmth of spring it was but rarely that we heard the note of a bird. And a death-like silence reigned over the river bank as well as in the neighbouring desert.

On the 14th April we arrived at the oasis of Cherchen, which lies at an elevation of 3800 feet on the same Cherchen-daria, 60 versts (40 miles) from its exit from the mountains, and like other oases of Central Asia, appears like a little green island in the wild desert. The whole oasis contains about 600 houses, in which there are about 3000 souls of both sexes. This settlement was founded only ninety years ago by emigrants from Khotan, Kiria, Aksu, and Kashgar. The first mentioned belong to the tribe of Machin, the last to that of Ardbiul. They are distinct in external type one from the other. The Machin is the ancient rootstock of East Turkistan, and now inhabits its south-eastern part, between Cherchen, Keria, and Khotan, and the neighbouring mountains. This tribe is also met with, though in small numbers, at Yarkand. The Ardbiul, according to the natives, live between Aksu and Kashgar inclusive. To the east of Aksu, in the towns of Boi, Kucha, and partly in Kurla, according to the same information, live the Khurasan, a tribe which, according to tradition, came here from Afghanistan even before the time of Alexander the Great. With these nationalities of Eastern Turkistan other tribes became mixed, for the most part as conquerors, more rarely as traders and colonists. Such were, in ancient times, the Uighurs, Chinese, Arabs,—the latter introducing Mahommedanism,—the Mongols, and, in modern times—the Chinese again, Andijanis (Kokandians) Hindus, Afghans, and others. We had only the opportunity of studying the Machinians, and will speak in detail of them hereafter. I will now say that this tribe, judging from its characteristic traits, shows an infusion of Mongol blood, while the Ardbiul, especially middle-aged and old men, have a strong resemblance to the Jews, or, more correctly, show a mixture of the Turkish and Semitic races.

There are no towns, i. e. walled habitations, in the Cherchen oasis, but only detached homesteads with fields and gardens adjoining. In the gardens there are apple trees, peach, apricot, white mulberry, plums, pears, and vines. The fields are sown with wheat, barley, rice, maize, beans, tobacco, melons, water-melons, carrots, and a small quantity of cotton. The extent of land under cultivation is small. I estimate it at not more than 1000 to 1500 dessiatines (2700 to 4050 acres). Here, as everywhere in Central Asia as well as throughout China, the fields may rather be called gardens, so diminutive are they and so carefully cultivated, doubtless owing to the abundance of manual labour. But with so dense a population and so small a supply of running water, indispensable for the fertilisation of this soil, every family only produces enough to satisfy its wants. At the best the surplus is small, and more often there is not enough.

Close to the oasis of Cherchen are the traces of two ancient cities, the oldest of which was destroyed, as we learned from the natives, about 3000 years back by the bogatyr [fabulous warrior] Rustem of Daghestan; the other city of a later date was annihilated by the Mongols at the end of the tenth century of our era. The sites of both cities are now buried under a barren desert partly covered with loess and sand hillocks. Here and there the remains of huts and walls stand forth, while cups made of clay, and occasionally, men's bones, litter the ground.* The natives find copper and gold coins, ingots of silver, gold ornaments for apparel, precious stones (diamonds and turquoises), beads, foundry slag, and copper utensils, and what is remarkable, glass in the older city, besides which, in the newer, burnt bricks. After excavating they have come upon single wooden coffins. In these the corpses (never embalmed) are sometimes well preserved, owing to the excessive dryness of the climate and air. The men are of great size and with long hair, the women with one or two tresses. Once they discovered a vault with the bodies of twelve men in a sitting posture. Another time the body of a girl was found. Her eyes were closed with gold cups, and her head bound round chin and crown of the head with a thin sheet of gold; she was dressed in a long but narrow woollen robe (in perfect preservation), ornamented on the chest with several gold stars; the feet were bare. Not only were the corpses well preserved, but even the wood of which the coffins were made, so much so that the people of Cherchen, as they told us, use it in various ways. With the human remains there occur in the graves bones of horses and sheep.

The people of Cherchen assured us that traces of ancient cities and settlements are found along the whole central course of the Cherchen-daria, 5 to 15 versts to the west of the present course of this river. Lastly, at the same Cherchen, at Lob-nor as well as in the oasis of Kiria, we heard more than once of a tradition that between Khotan, Ak-su, and Lob-nor, there were once twenty-three flourishing cities now buried beneath the sand of the desert.

At Cherchen, Lob-nor, and farther along our route, the inhabitants received us in a very friendly way. The Chinese, on the other hand, tried by every artifice to hinder us. They forbad the natives from selling us provisions and supplying guides; declaring that we would seize their property, that we were travelling with the worst intentions, &c.; in a word, they tried by every manœuvre to take our character away. But in spite of all this, the natives showed that they were well disposed towards us, and always were ready to serve us. At the same time they bitterly complained of their hard lot, assuring us that they were all ready to rise against their oppressors, the Chinese. And more than this, the elders, both of the oases and mountain tribes, asked us to give them the order to destroy the Chinese at once.

"We wish for nothing better than to become the subjects of Russia," they all said to us. "We know that justice reigns in Russian Turkistan. But with us every Chinese official, nay every soldier, may with impunity beat us, take away our property, our wife, children. They tax us in a most exorbitant way. . . . We cannot long endure such outrages. . . . We can rise at any minute; we have guns ready and concealed. All that we want is a head, a leader. Give us only one of your Cossacks; let him be our commander." Such tales we often listened to.

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* This does not corroborate the passage from the Tarikhi-i-Rashidi given above and quoted by Sir H. Rawlinson, Colonel Yule, M. Quatremère, and others. It is, however, not impossible, with the well-known shifting character of the sands of the Tarim basin, that traces of cities which have lain buried for centuries may have come to light. —Cf. 'R. G. S. Journal,' xxxvii. p. 7, and 'Proceedings,' xvi. p. 244.—M.

From Cherchen to Kiria lead two roads; the one through heavy sands, the other along the borders of the Tibetan plateau. We chose the latter though more difficult route; for by this way we could explore completely unknown mountains, and moreover save our camels from the heat and unbearable mosquitoes. Specially difficult were the first two days' travel, when for 87 versts (58 miles) from Cherchen to the foot of the Tibetan mountains we had no water.

In this part, the margining range, as already mentioned, has no general name, and I called it "Russian," as I once christened with a similar name on the opposite side of Tibet, the lake out of which flows the Yellow river.

The newly discovered Russian range forms the immediate continuation of the Tokus-daban,* which in its turn joins the Moscow range, forming together with the Columbus, Marco Polo, Burkhan-Buddha and others a second inner bulwark of the Tibetan plateau on the side of the Tsaidam (Chaidam) basin.

The Russian range extends from north-east to south-west between the rivers of Cherchen and Kiria for a distance of 400 versts (267 miles). Everywhere on the side of the Tarim lowlands, it stands as a lofty precipitous wall, occasionally rising above the snow-line. Particularly lofty is its south-western part. Here snowy peaks and ice-fields extend in an unbroken ridge, over which, near the Kiria river towers a colossal, cone-shaped peak, apparently from 22,000 to 23,000 feet above sea-level. It is called "The Tsar Liberator."

From the snowy summits of these hills rivulets course down, eroding for themselves in the alluvial soil of the plain, deep trench-shaped ravines, and then losing themselves in the shifting sands of the desert. The mountains themselves for a belt of 10,000 to 12,000 feet above the sea are covered with tolerable pasturage, affording grazing grounds for the herds of the local Machinians. The Russian range is rich, too, in gold and jade-stone—*yu-shi*, highly prized in China. Of this stone various articles are manufactured, such as tobacco-boxes, saucers, little boxes, mouth-pieces, &c.† Moreover, according to the belief of the Turkistanians, a bracelet of this stone placed on the arm of a dead person preserves the body from decay. Rich people make themselves pillows of jade to put inside their graves, under the belief that the marvellous power attributed to this stone will be proportionately greater.

There are no easy passes across the Russian range into Tibet,‡ though formerly there are said to have been roads along the defile of the Tolan-hadji, near the mazar (tomb) of Unchelik-pashim. This is the shrine of a sister of the Imam Djafar-Sadyk, one of the most esteemed saints of Eastern Turkistan; it lies about midway in the extent of the Russian range, and is visited by many pilgrims. Tradition says that Unchelik-pashim, pursued by Machinians who were trying to kill her, escaped to the mountains, and on reaching the spot where a mosque now stands, waved her handkerchief. Then one of the mountains opened and received the holy damsel. When she had entered the mountain again closed, but, unfortunately, so as to catch the rescued saint by her tress, the end of which is to this day shown to the faithful in a rock near the temple. Here, too, there is a spring which brings out of the rock pebbles of red, white, and yellow limestone. True believers prize these pebbles very

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* I. e. the nine mountain-passes, a district mentioned by Mr. Shaw's native informant. Cf. 'Proceedings R. G. S.,' xvi. p. 244.—M.

† Articles in jade are sold in the Kulja bazaars, but the stone is so skilfully imitated that a novice may easily be taken in.—M.

‡ (Cf. 'Proceedings R. G. S.,' N.S., ii. p. 312, and the Pandit A—k's route in vol. vii. of the same series (pp. 68 *seq.*); but the Pandit crossed Northern Tibet in a more easterly meridian than Lob-nor, nearly identical with Prejevalsky's first attempt to penetrate into that country.—M.

highly, and say they are the petrified tears of Unchelik-pashim who still weeps in the mountain for the sins of mankind.

After marching 397 versts from Cherchen we reached the oasis of Nia,* on a rivulet of the same name, 50 versts from its exit from the Russian range. The absolute elevation here is 4200 feet. The number of inhabited hovels is 1000 to 1200; they are grouped round separate farms. Once in ten days there is a bazaar, which is visited by merchants from Kiria. The Machinian inhabitants are much spoilt by their proximity to the gold-mine of Sorchak, situate on the Nia-daria where it leaves the Russian range.

We found a more cheerful site for our encampment at the little village of Yasulgun, where we passed several days in expectation of the arrival of our interpreter, who had fallen sick at Cherchen. There is a capital pond at Yasulgun, in which we bathed several times a day, a most opportune relief from the great heats which then (towards the end of May) were as much as + 37° Cels. (98° Fahr.) in the shade. The inhabitants of Yasulgun were very good-natured and hospitable. Their village life appeared full of simplicity: the little children ran about naked; bathed and rolled in the sand, playing, fighting with one another, and climbing the mulberry-trees like monkeys, for the fruit, which was then ripe. In the village itself swallows flitted to and fro, crows cawed, pigeons cooed, cocks crowed, and the hen chucked to her chicks . . . . In fact village life here is just what it is with us; and the rural are much better than the townspeople.

Two marches from Yasulgun we reached the oasis of Kiria, larger than any we had hitherto seen. Its absolute elevation is 300 feet higher than the two oases of Nia, and its distance from Lob-nor, 870 versts (580 miles).† The river Kiria-daria, on which the oasis is situate, flows from the Tibetan plateau, and passing this place during flood time, continues for 200 versts further in a northerly direction before losing itself in the sands.

Kiria itself is said to contain 3000 habitations; but it is no town in the Asiatic sense, for it is not enclosed with a mud-wall, neither does it possess shops, except a few small ones, though a bazaar (or market) meets here twice a week. Besides native produce, there is an abundance of Russian goods, especially dyed fabrics—such as cotton prints, red fustian, plush, handkerchiefs, &c.; also Russian sugar (56 copecks per lb.), candles, &c. Russian money, both silver and notes, passes currency here. The local coin, as throughout Eastern Turkistan, is the silver *tengeh*, a little larger than our *grivennik*, containing thirty copper coins, *puls*.

Chinese silver ingots about 4½ lb. each are exchanged here for 1200 tengeh or thereabouts. The inhabitants of Kiria are as spoilt as those of Nia. They mostly engage in the gold industry. Agriculture only supplies local wants; there are comparatively few gardens; silk production and cotton growing are on an insignificant scale. There are no manufactures in Kiria, and nothing but gold is exported.

Formerly Kiria had no independent political existence, and was under the immediate subjection of Khotan. But now the Chinese have made of Kiria a separate

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* Nia is the second stage (33 miles) from Kiria. Colonel Yule says that it is probably the ancient city of Ni-jang of the ancient Chinese itineraries ('Marco Polo,' i. p. 202).—M.

† This distance is much greater than that calculated by Mr. Johnson (269 miles), and by Mr. Shaw (304 miles, exclusive of windings), and must have some weight in fixing the position of Lob-nor, which it was proposed to shift three degrees to the westward of that assigned to it on Kiepert's map of Asia. Cf. Yule's 'Marco Polo,' 2nd ed., i. p. 204. —M.

‡ About the size of a sixpence.—M.

district, subject to the authorities at Kashgar. This district extends eastward to the village of Chargalyk near Lob-nor, besides taking in some of the hill tribes of the Machinians. There are altogether, as we heard, 11,000 to 12,000 families in the Kiria district.

The oases of Nia and Kiria begin the long row of such oases extending with greater or less intervals through Khotan and Yarkand to Kashgar, and then along the southern foot of the Tian-Shan. Their general appearance and character have much in common. The chief occupations of the inhabitants are agriculture and horticulture. Husbandry favoured by an abundant supply of labour, a warm climate, and an unusually prolific loess soil, well supplied with irrigation, has attained a high degree of perfection, even from very remote times. Inexorable necessity has obliged the native to employ all his energies in irrigation works, which ramify like the veins and arteries in the animal organism, and fertilise every plot of arable land. To the unaccustomed eye it is wonderful to see how these water channels cross and recross one another in the oasis, now flowing side by side, only at different levels, now coursing through wooden troughs placed one over the other, and again pouring over the flat roofs of the hovels in the same troughs. Water brings life wherever it comes—it not only moistens the soil but fertilises it with loess mud. The larger dykes, from which smaller channels are led, start at great distances of many versts from the oasis, and if the river reach the oasis it flows at a much lower level than the fields and gardens supplied with its water.

The mode of cultivation, not only of the gardens and orchards but of the fields, is admirable. The soil is so thoroughly tilled that not a clod is left; the whole field is divided into small rows, and these are sown with the grain, whilst every furrow is filled with water. The agriculturist knows exactly when to turn the water in and when to shut it off. The fields are usually not large, and are arranged in terraces one above the other for convenience in irrigating. Strict order is observed in regulating the supply for each owner, and special overseers superintend this part of the work. The rice-fields are on the lowest ground and almost continually flooded. Every hovel, every garden and enclosure, nay, every big tree if it stand alone, has its separate water supply turned on or off as occasion requires. The banks of the dykes are usually planted with poplar, willow, elæagnus, and mulberry, serving both to give shade and firing. They are treated in the most tender way, if we may use such an expression. Hence these trees grow rapidly and freely. In seven or eight years a poplar is of sufficient size to supply a log fit for building purposes, and in thirty to thirty-five years measures two spans in circumference, with a height of 100 feet. For firing, the tree (willow or poplar) is cut 14 feet from the ground and the stump stopped with clay so as to prevent its drying. Such a stump will send out fresh growth, which soon forms a thick handsome head of branches, especially in the case of the willow. Only those trees which have dried up are felled at the root.

All the oases are sown with wheat, barley, maize, rice, peas, millet, clover, melons, water-melons, tobacco, and cotton; the kitchen gardens—with onion, radish, turnip, carrot, cucumber, gourds, and cooking herbs; the fruit-gardens—with apricot, peach, grapes, apples, pears, plums, pomegranates, nuts, and mulberry; here, too, there are often small ponds (*bostang*), and flower-gardens, in which grow roses, asters, pinks, balsams, and other flowers. The fields are generally small in comparison with the number of inhabitants. I estimate the average quantity of land for a family of five persons at hardly as much as two dessiatines (5·4 acres). This insufficiency of land is counterbalanced by the excellence of the crops of grain as well as by the moderate wants of the native, who grows only enough for his own use and has hardly anything over to sell; many natives having several families to support.

The enclosures round the hovels are generally on a miniature scale, and the vegetables are poor. But the fruit-gardens are much better and larger. The most careful attention is bestowed on the trees, which grow admirably and yield excellent fruit. It is only to be regretted that the natives gather the fruit before it is ripe, and are careless in their treatment of it. Apricots, peaches, and grapes are dried, and in this form are the invariable accompaniments of the *dosterkhana* (entertainment). Apples, melons, and grapes keep fresh all the winter. Fresh fruit in summer and dried fruit in winter are a great addition to the *régime* of the native.

I will now continue the description of our journey. The Chinese authorities, whom we first met at Kiria, received us with every outward mark of respect, but continued to maintain their previous system—flattering us before our faces and insidiously doing us harm behind our backs. Thus, on learning that we had the intention of proceeding to Tibet, the amban of Kiria secretly ordered the destruction of two bridges in the mountains, and the obstruction of the pathways with stones. At the same time this very amban was so afraid lest our arrival should cause an insurrection among the inhabitants that he gave orders to collect by force from the latter all their supplies of grain, which he stored in eight hovels, and these, we were told by the people, he mined, so that in case of a rising he could spring the mines and deprive the insurgents of food. The amban also rode out several nights in succession with an escort, and encamped outside the oasis fearful again of a surprise.

GEOGRAPHICAL NOTES.

The Exhibition of Geographical Appliances.—This Exhibition will be formally opened on December 8th, at 2.30 P.M., by the President of the Society, the Marquis of Lorne. The object and nature of the collection will be then explained. In connection with the Exhibition there will be a short series of lectures and discussions, at which it is hoped those specially interested in geographical education will be present. There will be two short lectures, followed by discussions, before Christmas, one by Mr. Ravenstein, on the aims and methods of geographical education, and another, by Mr. Keltie, on apparatus; and in January, it is hoped, two or three other lectures will be delivered, on the scientific, technical, and industrial aspects of geographical education, by men recognised as authorities in their special departments. The Exhibition, we may remind Fellows, is at 53, Great Marlborough Street.

Mr. H. O. Forbes's Expedition.—Mr. Forbes arrived safely at Port Moresby in company with Sir Peter Scratchley, early in September, and made immediate arrangements to start for the interior in company with the experienced traveller the Rev. Mr. Chalmers.—We have to acknowledge the receipt of the following sums subscribed in response to Mr. H. H. Johnston's appeal, on the occasion of news arriving of the shipwreck of Mr. Forbes' stores, in the *Times* of October 1st:—J. S. Budgett, 25*l.*; Miss North, 5*l.*; H. H. Johnston, 3*l.* 3*s.*; Mrs. Forster, 1*l.*; W. W.