

into a city of four quarters. The suburb Temenites was expanded into Neapolis (New Town), spreading over the adjoining slopes. A district stretching down to the sea, to the north-west of Achradina, was taken in, and subsequently enlarged into a separate fortified town. Tyche (Τύχη) was the name given to this quarter, according to Cicero (*In Verr.*, iv. 52, 53) from an old temple of Fortune somewhere within its limits,—a fact which seems to indicate that the spot must have been inhabited in very early times. But of this Thucydides says nothing, and his silence on a point which would have naturally entered into his description of the Athenian blockading operations is somewhat perplexing. This quarter was in Cicero's time the most populous part of the entire city; it was practically secured by the new city walls, which were drawn inland in a triangular form so as to enclose the hill of Epipolæ, the apex of the triangle being the fortress of Euryalus, the remains of which are said to be the most perfect existing specimen of ancient fortification. Syracuse was now secure on the land side. The Island (Ortygia) had been provided with its own defences, converted in fact into a separate stronghold, with a fort to serve specially as a magazine of corn, and with a citadel or acropolis which stood apart, and might be held as a last refuge. Dionysius, to make himself perfectly safe, drove out a number of the old inhabitants and turned the place into barracks for his soldiers, he himself living in the citadel. For any unpopularity he may have thus incurred he seems to have made up by his great works for the defence of the city; these were executed under the direction of the most skilful engineers, and are said to have found employment for 60,000 men. The new lines covered an extent of 3½ miles, and were constructed of huge well-cut blocks of stone from the neighbouring quarries. Each quarter of the city had its own distinct defences, and Syracuse was now the most splendid and the best fortified of all Greek cities. Its naval power, too, was vastly increased; the docks were enlarged; and 200 new warships were built. Besides the triremes, or vessels with three banks of oars, we hear of quadriremes and quinqueremes with four and five banks of oars,—larger and taller and more massive ships than had yet been used in Greek sea warfare. The fleet of Dionysius was the most powerful in the Mediterranean. It was doubtless fear and hatred of Carthage, from which city the Greeks of Sicily had suffered so much, that urged the Syracusans to acquiesce in the enormous expenditure which they must have incurred under the rule of Dionysius. Much too was done for the beauty of the city as well as for its strength and defence. Several new temples were built, and gymnasia erected outside the walls near the banks of the Anapus (*Diod.*, xv. 13).

Dionysius the Younger.

"Fastened by chains of adamant" was the boastful phrase in which Dionysius described his empire; but under his son, the younger Dionysius, an easy, good-natured, unpractical man, a sort of cleverish dilettante, a reaction set in amongst the restless citizens of Syracuse, which, with its vast and mixed population, must have been full of elements of turbulence and faction. But the burdensome expenditure of the late reign would be enough to account for a good deal of discontent. A remarkable man now comes to the front,—Dion, the friend and disciple of Plato, and for a time the trusted political adviser of Dionysius, whom he endeavoured to impress with a conviction of the infinite superiority of free and popular government to any form of tyranny or despotism. Dion's idea seems to have been to make Dionysius something like a constitutional sovereign, and with this view he brought him into contact with Plato. All went well for a time; but Dionysius had those about him who were opposed to any kind of liberal reform, and the result was the banishment of Dion from Syracuse as a dangerous innovator. Ten years afterwards, in 357, the exile entered Achradina a victor, welcomed by the citizens as a deliverer both of themselves and of the Greeks of Sicily generally. As yet, however, this was the only part of the city gained. A siege and blockade, with confused fighting and alternate victory and defeat, and all the horrors of fire and slaughter, followed, till Dion made himself master of the mainland city. Ortygia, however, was still held by Dionysius; but, provisions failing, it also was soon surrendered. Dion's rule lasted only three years, for he perished in 354 by the hand of a Syracusan assassin. It was, in fact, after all his professions, little better than a military despotism. The tyrant's stronghold in the Island was left standing,

and Dion actually opposed a proposal for its destruction. The man who won immense popularity by the proposal was murdered, and Dion seems to have been an accomplice in the crime.

Of what took place in Syracuse during the next ten years we know but little. The younger Dionysius came back and from his island fortress again oppressed the citizens; the plight of the city, torn by faction and conflicts and plundered by foreign troops, was so utterly wretched that all Greek life seemed on the verge of extinction (*Plato, Epist.*, viii.). Sicily, too, was again menaced by Carthage. Syracuse, in its extremity, asked help from the mother-city, Corinth; and now appears on the scene one of the noblest figures in Greek history, TIMOLEON (*q.v.*). To him Syracuse owed her deliverance from the younger Dionysius and from the rule of despots, and to him both Syracuse and the Sicilian Greeks owed a decisive triumph over Carthage and the safe possession of Sicily west of the river Halycus, the largest portion of the island. From 343 to 337 he was supreme at Syracuse, with the hearty goodwill of the citizens. The younger Dionysius had been allowed to retire to Corinth; his island fortress was destroyed and replaced by a court of justice. Syracuse rose again out of her desolation—grass, it is said, grew in her streets—and, with an influx of a multitude of new colonists from Greece and from towns of Sicily and Italy, once more became a prosperous city. Timoleon, having accomplished his work, accepted the position of a private citizen, though, practically, to the end of his life he was the ruler of the Syracusan people. After his death (337) a splendid monument, with porticoes and gymnasia surrounding it, known as the Timoleonteum, was raised at the public cost to his honour.

In the interval of twenty years between the death of Timoleon and the rise of Agathocles to power another revolution at Syracuse transferred the government to an oligarchy of 600 leading citizens. All we know is the bare fact. It was shortly after this revolution, in 317, that Agathocles with a body of mercenaries from Campania and a host of exiles from the Greek cities, backed up by the Carthaginian Hamilcar, who was in friendly relations with the Syracusan oligarchy, became tyrant or despot of the city, assuming subsequently, on the strength of his successes against Carthage, the title of king. Syracuse passed through another reign of terror; the new despot proclaimed himself the champion of popular government, and had the senate and the heads of the oligarchical party massacred wholesale. This man of blood seems to have had popular manners, and to have known how to flatter and cajole, for a unanimous vote of the people gave him absolute control over the fortunes of Syracuse. His wars in Sicily and Africa left him time to do something for the relief of the poorer citizens at the expense of the rich, as well as to erect new fortifications and public buildings; and under his strong government Syracuse seems to have been at least quiet and orderly. After his death in 289 comes another miserable and obscure period of revolution and despotism, in which Greek life was dying out; and but for the brief intervention of Pyrrhus in 278 Syracuse, and indeed all Sicily, would have fallen a prey to the Carthaginians.

A better time began under Hiero II., who had fought under Pyrrhus and who rose from the rank of general of the Syracusan army to be tyrant—king, as he came to be soon styled—about 270. During his reign of over fifty years, ending probably in 216, Syracuse enjoyed tranquillity, and seems to have grown greatly in wealth and population. Hiero's rule was kindly and enlightened, combining good order with a fair share of liberty and self-government. His financial legislation was careful and con-

siderate; his laws¹ as to the customs and the corn tithes were accepted and maintained under the Roman government, and one of the many bad acts of the notorious Verres, according to Cicero, was to set them aside (*Cic., In Verr.*, ii. 13; iii. 8). It was a time too for great public works,—works for defence at the entrance of the Lesser Harbour between the Island and Achradina, and temples and gymnasia. Hiero through his long reign was the staunch friend and ally of Rome in her struggles with Carthage; but his paternal despotism, under which Greek life and civilization at Syracuse had greatly flourished, was unfortunately succeeded by the rule of a man who wholly reversed his policy.

Hieronimus, the grandson of Hiero, thought fit to ally himself with Carthage; he did not live, however, to see the mischief he had done, for he fell in a conspiracy which he had wantonly provoked by his arrogance and cruelty. There was a fierce popular outbreak and more bloodshed: the conspirators were put to death and Hiero's family was murdered; whilst the Carthaginian faction, under the pretence of delivering the city from its tyrants, got the upper hand and drew the citizens into open defiance of Rome. Marcellus was then in command of the Roman army in Sicily, and he threatened the Syracusans with attack unless they would get rid of Epicydes and Hippocrates, the heads of the anti-Roman faction. Epicydes did his best to stir up the citizens of Leontini against Rome and the Roman party at Syracuse. Marcellus therefore struck his first blow at Leontini, which was quickly stormed; and the tale of the horrors of the sack was at once carried to Syracuse and roused the anger of its population, who could not but sympathize with their near neighbours, Greeks like themselves. The general feeling was now against any negotiations with the Roman general, and, putting themselves under Epicydes and Hippocrates, they closed their gates on him. Marcellus, after an unsuccessful attempt to negotiate, began the siege in regular form (214 B.C.) by both land and sea, establishing a camp on Polichne, where stood the old temple of Olympian Zeus; but he made his chief assault on the northern side and on the defences of Tyche, particularly at the Hexapylum, the entrance facing Megara and Leontini. His assault seawards was made mainly on Achradina, but the city was defended by a numerous soldiery and by what seem to have been still more formidable, the ingenious contrivances of Archimedes, whose engines dealt havoc among the Roman ships, and frustrated the attack on the fortifications on the northern slopes of Epipolæ (*Liv.*, xxiv. 34). Marcellus had recourse to a blockade, but Carthaginian vessels from time to time contrived to throw in supplies. At length treachery began to work within. Information was given him in the spring of 212 (two years from the commencement of the siege) that the Syracusans were celebrating a great festival to Artemis; making use of this opportunity, he forced the Hexapylum entrance by night and established himself in Tyche and on the heights of Epipolæ. The strong fortress of Euryalus held out for a time, but, being now isolated, it soon had to surrender. The "outer" and the "inner city" of Thucydides still held out, whilst a Carthaginian fleet was moored off Achradina and Carthaginian troops were encamped on the spot. But a pestilence broke out in the autumn of 212, which swept them clean away, and thinned the Roman ranks. The ships sailed away to Carthage; on their way back to Syracuse with supplies they could not get beyond Cape Pachynus owing to adverse winds, and they were confronted by a Roman fleet. All hope for the city being now at an end, the Syracusans threw themselves on the mercy of Mar-

Siege by Marcellus.

cellus; but Achradina and the Island still held out for a brief space under the Syracusan mercenaries, till one of their officers, a Spaniard, betrayed the latter position to the enemy, and at the same time Achradina was carried and taken. Marcellus gave the city up to plunder (*Liv.*, xxv. 31), and the art treasures² in which it was so rich—many of the choicest of them no doubt—were conveyed to Rome. From this time art seems to have become quite fashionable in certain Roman circles. Archimedes perished in the confusion of the sack, while he was calmly pursuing his studies (*Liv.*, xxv. 31).

Syracuse was now simply one of the provincial cities of Rome's empire, and its history is henceforward merged in that of Sicily. It retained much of its Greek character and many of its finest public buildings, even after the havoc wrought by Marcellus. Its importance and historic associations naturally marked it out as the residence of the Roman prætor or governor of Sicily. Cicero often speaks of it as a particularly splendid and beautiful city, as still in his own day the seat of art and culture³ (*Tusc.*, v. 66; *De Deor. Nat.*, iii. 81; *De Rep.*, i. 21), and in his speeches against Verres (*iv.* 52, 53) he gives an elaborate description of its four quarters (Achradina, Neapolis, Tyche, the Island), or rather the four cities which composed it. It seems to have suffered in the civil wars at the hands of Sextus Pompeius, the son of the triumvir, who for a short time was master of Sicily; to repair the mischief, new settlers were sent by Augustus in 21 B.C., and established in the Island and in the immediately adjoining part of Achradina (*Strabo*, vi. 270, ed. Kramer). It is in these districts that the remains of Roman works—of amphitheatres and other public buildings—are mainly to be traced. We hear nothing of any importance about Syracuse during the period of the empire. It had its own senate and its own magistrates.⁴ Caius Caligula restored its decayed walls and some of its famous temples (*Suetonius, Caius*, 21). Tacitus, in a passing mention of it (*Ann.*, xiii. 49), says that permission was granted to the Syracusans under Nero to exceed the prescribed number of gladiators in their shows. Hence the city by that time must have been provided with an amphitheatre. In the 4th century it is named by the poet Ausonius in his *Ordo Nobilium Urbium*, chiefly, perhaps, on the strength of its historic memories.

Modern Syracuse is confined to the island of Ortygia, and is only about 2½ miles in circumference. The island is irregularly oval in shape, and extends from north to south on the east side of the fine natural harbour, the Porto Grande (*Magnus Portus*). On the north it is connected with the mainland by a dyke or narrow isthmus, and between the southern extremity and the opposite peninsula of Massolivieri, the ancient Plemmyrium, there is a stretch of 1300 yards, forming the entrance to the harbour. The approach to the town from the mainland is defended by a dilapidated citadel of the time of Charles V., and the southern extremity is occupied by a castle named after George Maniaces, the last Byzantine general by whom it was held in the 11th century before it fell into the hands of the Saracens. The town is further defended by walls with bastions. The streets are in general narrow, and their chief feature consists in their numerous convents with wooden-latticed windows. One tolerably wide and handsome street crosses the island from east to west. Besides the fortifications, the principal objects of interest are the cathedral of Santa Maria delle Colonne (the ancient temple of Minerva), adjoining which is the archiepiscopal residence; the archaeological museum, the finest works preserved in which are a statue of Venus in Parian marble and a colossal head of Zeus; and the fountain of Arethusa, which still bubbles up as clear and abundant as ever on the west side of the island. Its waters, however, are no longer drinkable, an earthquake in 1170 having allowed the sea water to become mingled with them. From the neighbourhood of this fountain a favourite promenade extends northwards along the shore of the Porto Grande.

Syracuse has been a place of little importance since the year 878, when it was destroyed by the Saracens under Ibrahim ibn Ahmed.

¹ Statues and pictures are particularized by *Livy*, xxv. 40.

² The poets Theocritus and Moschus were Syracusans.

³ Local self-government, in fact, like most of the Greek cities.

⁴ The laws of Hiero are often mentioned with approval in Cicero's speeches against Verres.

Since that date the mainland portion of the city has never been rebuilt. Syracuse is the seat of an archbishop, and since 1865 has been the capital of a province, which takes its name from the town. The inhabitants manufacture drugs and other chemical articles, earthenware, &c., and carry on a considerable trade, principally in wine. In 1885 785 vessels of 21,818 tons entered the port and 778 vessels of 21,450 tons cleared. At Syracuse Admiral de Ruyter died in 1676 after his defeat by the French at Agosta. The population in 1881 was 21,157.

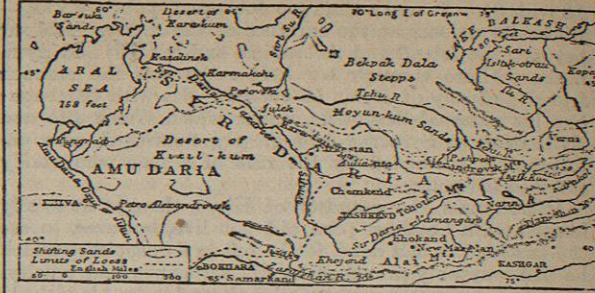
See Hare, *Cities of Southern Italy and Sicily* (London, 1883).

SYRACUSE, a city of the United States, the county seat of Onondaga county, New York, 148 miles west of Albany, midway between that city and Buffalo. Syracuse is situated near the southern end of Onondaga Lake (5 miles long by 1 broad), whose waters flow northwards through Seneca and Oswego rivers into Lake Ontario at Oswego. The Erie Canal, flowing east and west, joins the Oswego Canal within the city. Syracuse contains several handsome public buildings,—the county courthouse, the United States Government building, the city-hall, the State asylum for idiots, the Onondaga penitentiary, the county orphan asylum, the asylum of St Vincent de Paul, the high school (containing the central library of 15,000 volumes), a State armoury, &c. Syracuse is the seat of a (Methodist) university, founded in 1870 and consisting of a college of the liberal arts, a college of the fine arts, and a college of physicians and surgeons. The salt industry, to which Syracuse owed much of its early prosperity, is still the staple; the springs situated near the southern end of Lake Onondaga, which appears to be the remains of a once very extensive basin, have been under State control since 1797. Previous to the opening of the Michigan springs they were the largest in the United States, and they still yield on an average from 7,000,000 to 8,000,000 bushels of salt per annum. Rolling-mills, furnaces, steel-works, glass-works, breweries, and manufactories of barrels, agricultural machinery, and clothing are among the secondary industrial establishments. At the completion of the Erie Canal in 1825 Syracuse had only 300 inhabitants; by 1855 they were 25,107, and in 1860, 1870, and 1880 respectively they numbered 28,119, 43,051, and 51,792; in 1886 the number had risen to 81,000, including some adjacent villages recently annexed.

By some investigators it is believed that Lake Onondaga was De Soto's "silver-bottomed" lake. The great tribal fortress of the Onondagas on the east side of the lake near the spot now occupied by Liverpool was attacked without success by Champlain in 1615. The first house on the site of Syracuse was built in 1805. The village, to which the name of Syracuse had been given in 1824, was incorporated in 1825, and the city in 1847.

SYR-DARIA (Gr. and Lat. *Jaxartes*; Arab. *Shash* or *Sihun*), a river flowing into the Sea of Aral, and having a length of 1500 miles and a drainage area of about 320,000 square miles. Incertitude as to its source prevailed until the recent occupation of Turkestan by the Russians. It has now been traced to the Naryn, which has its sources in the heart of the Tian-Shan complex, some 30 miles south of Lake Issik-kul, in the elevated valleys or *syrts* (12,000 feet) on the southern slope of the Terskei Ala-tau. Here under the name of Jaak-tash the river takes its rise amid mountain scenery of the wildest description, partly from the marshy mountain plateaus by which the "Warm Lake" is also fed, and partly from the immense glaciers of the dark and barren Ak-shiriyak Mountains (Petroff and Sir-tash glaciers). After its union with another mountain stream, the Barskaun, it is called the Taragai, and flows west-south-west at from 11,000 to 10,000 feet above the sea, in a barren longitudinal valley between the Terskei Ala-tau and the foothills of the lofty Kokshat-tau. On entering a wild narrow gorge driven from west to east through the south-west continuation of the Terskei Mountains (Samatyn-tau) it receives the name of Naryn. Through this gorge it descends by a series of rapids from

the heights of the mountain *massif* to a deep valley of the alpine region, its level at its issue from the gorge being reduced by fully 4000 feet: Fort Narynsk, 20 miles below the junction of the Great and the Little Naryn, is only



Map 1 of Syr-Daria.

6800 feet above the sea. Here the river enters a broad valley—formerly the bottom of an alpine lake—and flows past the ruins of Fort Kurtka, for 90 miles westward, as a stream some 50 yards wide and from 3 to 11 feet deep. Its waters are utilized for irrigating Kirghiz corn-fields, which contrast strangely with the barren aspect of the lofty treeless mountains. The Atpasha—a large mountain stream—joins the Naryn at the head of this valley and the Alabuga at its lower end, both from the left. Before reaching the lowlands, the Naryn crosses three ridges separating the valley of Kurtka from that of Ferghana, by a series of wild gorges and broad valleys (170 miles), representing the bottoms of old lakes; the Togus-torgau, 2000 feet lower than Kurtka, and the Ketmen-tube are both covered with Kirghiz corn-fields. Taking a wide sweep towards the north, the river enters Ferghana—also the bottom of an immense lake—where, after joining the Kara-Daria (Black river) near Namangan, it receives the name of Syr-Daria.² The Kara-Daria is a mighty stream rising in the north-eastern spurs of the Alai Mountains. As it defects the Naryn towards the west again, the natives consider it the chief branch of the Syr-Daria, but its volume is much smaller. At the confluence the Syr is 1440 feet above sea-level.

The waters of the Syr-Daria and its tributaries are in this part of its course largely absorbed by numberless canals for irrigation. It is to the Syr that Ferghana is indebted for its high, if somewhat exaggerated, repute in Central Asia as a rich garden and granary; cities like Khokand, Marghilan, and Namangan, and more than 800,000 inhabitants of the former khanate of Khokand, live by its waters. Notwithstanding this drain upon it, the Syr could be easily navigated, were it not for the Bigovat rapids at Irdjar, at the lower end of the valley, where the river finds its way to the Aral-Caspian deserts by piercing a depression of the Mogol-tau.

On issuing from this gorge the Syr enters the Aral depression, and flows for 850 miles in a north-westerly and northerly direction before reaching the Sea of Aral. On this section it is navigated by steamers. Between the Irdjar rapids and Baidyr-turgai (where it bends north) the Syr flows along the base of the mountain ridges which girdle the Tchotkat Mountains (see below) on the north-west, and receives from the longitudinal valleys of these alpine tracts a series of tributaries (the Angren, the Tchirtchik, the Keles), which in their lower courses fertilize the wide plains of loess extending from the right bank of the Syr. These plains and their rich supply of water have been the

¹ Reduced from Mushketoff's "Geological Map of the Turkestan Basin," in his *Turkestan* (Russian), 1886, vol. i.

² *Syr* and *daria* both signify "river," in two different dialects.

cause of an oasis of Moslem civilization developing between the barren sands of the Aral depression and the mountain tracts of the Tian-Shan. The Angren rises beneath the highest parts of the Tchotkat range, and its valley is the granary of the region. The Tchirtchik has its origin in the Boroiday Mountains at the junction of the Tchotkat and the Pskem rivers, and at the point where it issues from the mountains it sends off the famous canal Zakharyk; it flows past Tashkend along a valley 20 miles wide, and joins the Syr a few miles below its confluence with the Angren. The Keles comes from the Jity-su Mountains and also brings a large volume of water for irrigation. But owing to wars and continual insecurity cities formerly important have now been abandoned; and near Tchinzaz, at the mouth of the Tchirtchik, are the ruins of a large town formerly fortified with high walls, and of *aryks* with manifold ramifications.

Some 50 miles below Tchinzaz (770 feet above sea-level) the Syr bends northwards, but resumes its north-westerly course 150 miles farther down, following with remarkable persistency the borders of the loess which fringes the mountains. Its low banks, covered with rushes and rendered uninhabitable in summer by clouds of mosquitoes, are inundated for 20 miles on both sides when the snows begin to melt. These inundations prevent the moving sands of the Kizil-kum desert from approaching the Syr; below Perovsk, however, the "steppe" gains the upper hand. Down to Perovsk the river rolls its muddy yellow waters, at the rate of 3 to 5 miles an hour, in a channel 300 to 600 yards wide and 3 to 5 fathoms deep; at Perovsk its vertical section is 8220 square feet, and 312,500 cubic feet of water are discharged per second. The Arys and the Bugui are the only tributaries worthy of notice on this part of its course; the other streams which descend from the Kara-tau fail to reach the river. The Kungrad Kirghiz rear numerous herds of cattle and sheep in the valley of the Arys, while lower down, as far as Julek, the Igintchis carry on agriculture. All this applies, of course, only to the right bank; on the left the moistness is absorbed by the hot winds which cross the Kizil-kum sands towards the river. The dryness of the atmosphere makes its influence markedly felt on the Syr when it enters, below Julek, a region where the Kara-kum sands extend on its right. Ten miles below Perovsk the river traverses a marshy depression—the bottom of a lake not yet fully dried up—where it divides into two branches,—the Jaman-daria and the Kara-uzyak. The latter spreads out in marshes and ponds, from which it again issues to join the former at Karmaktchi, after a course of 80 miles. The main branch also, owing to its shallowness and sinuosity, is very difficult to navigate, and this is increased by the rapidity of the current and the want of fuel. Between Kazalinsk and the Sea of Aral (158 feet) the navigation becomes somewhat easier, except for the last 10 miles, where the river divides into three shallow branches before entering the "Blue Sea." All three have at their mouths sandy bars with only 3 feet of water, which are often forded by the Kirghiz.

Two former right-hand tributaries of the Syr—the Tchu and the Sary-su—which now disappear in the sands some 60 miles before reaching it, must be mentioned. The Tchu, which is 600 miles in length, rises in the Tian-Shan to the south-west of Lake Issik-kul, and is made up of many streams, of which the Kyz-art, the Juvan-aryk, and the Koshkar are the more important. On their union these form the Koshkar, which flows towards Lake Issik-kul, but a few miles before reaching that lake turns suddenly to the north-west, enters under the name of Tchu the narrow gorge of Buam, and, piercing the snow-clad Kunghei Ala-tau, emerges on its northern slope, having descended from 5500 feet to less than 2000 in a course of not more than 50 miles. In this part of its course it receives from the right the Keles, whose high valley equals in size that of the upper Rhone. It then flows north-west-

wards through the valley of Pishpek, and, avoiding the Muyun-kum sands, describes a wide curve to the north before finally taking a western direction. Numberless streams flow towards it from the snow-clad Alexandrovsk Mountains, but they are for the most part lost in the sands before reaching it. The Tatas, 170 miles long, formerly an affluent of the Tchu, which rises in the highest parts of that range, pierces the Tcha-archa Mountains, and, flowing past Aulie-ata on the south border of the Muyun-kum, enters the salt lake Kara-kul 60 miles from the Tchu. The Tchu reaches the Saumal-kul group of lakes, 60 miles from the Syr, in the form of marshes with undefined channels. Another elongated group of lakes—the Uzun-kul—near the above and 50 miles from Perovsk, receives the Sary-su, which has a length of nearly 570 miles, and flows rapidly in a narrow channel along the west borders of the northern Famine Steppe (Bekpak-dala).

The delta of the Syr at present begins at Perovsk, whence it sends a branch to the south-west, the Yany-daria (Jany-daria or New river), which formerly reached the south-eastern corner of the Sea of Aral, very near the mouth of the Amu-daria. The Kirghiz affirm that a canal dug for irrigation by the Karakalpaks gave origin to this river. It had, however, but a temporary existence. A dam erected by the Khokandese at Ak-metchet (Perovsk) caused its disappearance, and the Russians found but a dry bed in 1820. When the dam was removed the Yany-daria again reappeared, but it failed to reach the Sea of Aral; in 1853 it lost itself in Lake Kutcha-denghiz, after a course of 250 miles; all traces of its bed were then lost in the sand. The Kirghiz legend can only be accepted, however, with very great caution; the present writer is inclined to think that the canal of the Karakalpaks was merely intended to redirect the waters of the Syr into a channel which existed of old, but had been dried up.¹ Certain it is that five centuries ago, in the time of Timur, the Yany-daria brought the waters of the Syr to the Dau-kara Lakes, close by the present mouth of the Amu. The series of old beds in the Kizil-kum, which are still seen above Perovsk, shows that the Syr had a constant tendency to seek a channel to the south-west and that its present delta is but a vestige of what it was in past times. At a still more remote period this delta probably comprised all the space between the Kara-tau and the Nura-tau; and in the series of elongated lakes at the base of the Nura-tau—the Tuz-kane and Bogdan-ata Lakes—we see an old branch of the delta of the Syr which probably joined the Zerafshan before reaching the Amu. The causes of this immense change are to be sought for simply in the rapid desiccation of the whole northern and central parts of Asia, due to the fact that we are now living in the later phase of the Lacustrine period, which has followed the Glacial period. The extremely rapid desiccation of the Sea of Aral is proved even by surveys a few decades old, and this process is but a trifle in comparison with the change which have taken place during the last five centuries: the extension of the Caspian Sea as far as the Sarakamysk lakes during the Post-Pliocene period and the extension of the Sea of Aral at least 100 miles to the east of its present banks are both proved by the presence of Post-Pliocene marine deposits. (P. A. K.)

SYR-DARIA, or SYR-DARIINSK, a province of Russian Turkestan, in Asia, comprising wide tracts of land on both sides of the Syr-Daria river, from its entrance into the Sea of Aral up to Khojend, where it issues from the mountain region of the Tian-Shan. It is bounded on the N. by the Russian provinces of Turgai and Akmolinsk, on the E. by Semiryetensk and Ferghana (ex-khanate of Khokand), on the S. by the district of Zerafshan, Bokhara, and the Russian province of Amu-daria, and on the W. by the Sea of Aral. Its area (166,000 square miles), its population (more than one million inhabitants), and its cities (Tashkend, Khojend, Jizak, &c.) make it the most important province of Russian Turkestan; and from its position between the mountain region of Central Asia and the great lake of the west Asian depression it is a region of deep interest for the geographer and geologist.

The south-eastern border of the province runs along the lofty Tchotkat Mountains. This chain, which separates the river Tchotkat from the Naryn, and runs for more than 200 miles from south-west to north-east, joining Alexandrovsk Mountains on the east, raises its snow-clad peaks to an altitude of 14,000 feet. It diminishes in height towards the south, not exceeding 7000 feet in the barren Mogol-tau Mountains, but seems to be continued to the south-west by the Baisun-tau. A series of shorter chains—

¹ For the old beds of the Syr and the Amu, see Kaulbars's "Lower Parts of the Amu," in *Mem. Russ. Geogr. Soc., Phys. Geogr.*, ix. (1881).