

# SCIENCE.—SUPPLEMENT.

FRIDAY, OCTOBER 1, 1886.

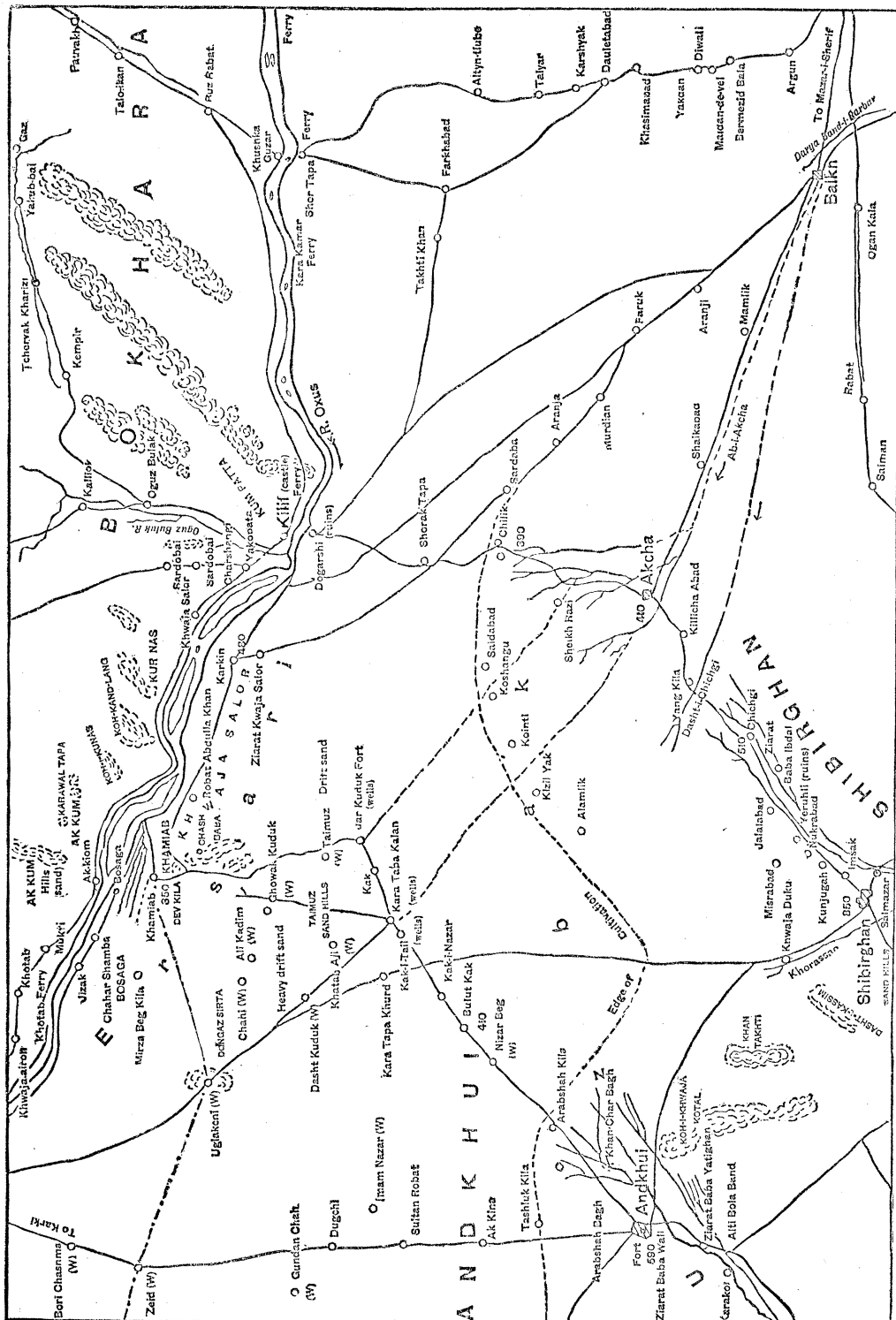
## *KHAM-I-AB.*

THE accompanying map from the *London Times* of Sept. 3 gives with the greatest attainable accuracy, as it contains the most recent surveys of the engineers attached to the English commission, the relative positions of all the places of importance in the last part of the Afghan frontier. The frontier has been absolutely laid down and marked with pillars as far as Dukchi, which is forty miles from the Oxus; and, as a general statement, the reader may accept the fact that Afghanistan retains pasturages of from fifteen to twenty miles north of the road from Meruchak to this place. Andkoi and Kerki on the west, Mazar-i-Sherif, and Chushka Guzar ferry on the east, form the four limiting points of the tract of Afghan territory which is of importance in connection with the final stage of the Afghan frontier question. The district of still more immediate importance is the forty miles separating Dukchi from the Oxus. It is here that the commissioners have been unable to come to an agreement on the spot, and that the governments of England and Russia must devise some means of reconciling conflicting views so that the frontier delimitations may be brought to a clear end. The government of Russia has employed, during the recent exchanges of opinion, the most conciliatory language, and there does not seem at present any reason why the negotiation should not, after all, terminate in an amicable manner. At all events, it is a question calling, in the interests of both countries, for calm consideration and delicate handling.

Since the British commission has been on the Afghan frontier, — and this, we may remind our readers, has been since November, 1884, — it has been found that the existing frontier of Afghanistan and Bokhara on the Oxus, and the one recognized by the tribes and chiefs on the spot, lies between the border districts of Kham-i-Ab and Bosaga respectively. English officers discovered that in 1873 or thereabouts the local officials of Afghanistan and Bokhara actually marked out this boundary. No place of the name of Khoja Saleh was found to exist; but the tract of country from the shrine of the Saint, called Ziarat-i-Kwaja Salor, down the river to Kham-i-Ab, or for a distance of twenty-five miles in all, was known to the Afghans as Khwaja Salor, or Khoja Saleh. It

is thus marked on the map. The district is of some fertility, and forms a subdivision of the Akcha governorship, to which it has belonged for nearly a century. It is appropriate to observe that by the 1873 agreement, which has been so much referred to as the basis of the present negotiations, Akcha was declared part and parcel of the dominions of Afghanistan. The district of Khoja Saleh is inhabited by Karkins as well as Ersaris. The former are not Turcomans; and the latter, who reside in Akcha and other Afghan towns, as well as along the Oxus, are not nomads, although Turcomans. They have been cultivators of the soil for a very long time past, and have paid their taxes regularly, and given no trouble to the Afghans.

The confusion which has arisen with regard to Khoja Saleh must, no doubt, be attributed to the account given by Sir Alexander Burnes of his passage of the Oxus at this place. No subsequent traveller has visited this particular point on the Oxus (Vambéry crossed at Kerki; and the Russian envoys to Afghanistan, at either Kilif or Chushka), and the hasty impressions of the English traveller have guided geographers ever since. We have no knowledge of what reports the captains of the Russian vessels, which began to ascend the river as high as Kilif in 1879, may have sent in as to where they first came into touch with Afghan authority, and this would be a point about which the English government might usefully institute some inquiries; but it is encouraging to know that that government has something to say in reply to the demand that the frontier should be laid down in rigid accordance with the terms of the protocol which repeated the phrase of Khoja Saleh employed in 1884 at the time of the formation of the commission, as well as during the negotiations of 1872-73. Accompanying the protocol a Blue-book (*Central Asia*, No. 3, 1885), containing certain maps, was published, and among these was an extract from the Russian staff map of Afghanistan. This map was intended for the guidance of the commissioners; and a zone of investigation, as well as a line of a proposed frontier, was marked on it. Kham-i-Ab is not mentioned on this map, but the point marked 'Khodsha-Salor' on it corresponds as nearly as possible in latitude and longitude with the Kham-i-Ab of the Afghans. Thus it is a fair contention that the Khoja Saleh of the protocol and agreement of 1873 should be taken as indicating



MAP SHOWING THE DISPUTED AFGHAN FRONTIER AND THE NEIGHBORING REGION.

a point on the Oxus corresponding to the western limit of the district called Khoja Saleh, and that, as the Afghans possessed this tract at the time of the earlier agreement, they should be allowed to retain it. This would, moreover, be in strict accordance with the principle laid down on that occasion; viz., that Afghanistan should be considered identical with the actual possessions of the Ameer Shere Ali.

To sum up the points presented by the Kham-i-Ab question, Russia has in her favor the specific mention of the name Khoja Saleh in the diplomatic documents. Beyond this fact, strong as it undoubtedly is, Russia does not seem to possess a weighty argument. On the other hand, there is the Afghan right of possession, unquestioned by anybody, going back for a long period, and confirmed in 1873. There is the recognition in 1873 of the Khanate of Akcha forming part of the dominions of Shere Ali, and consequently of Afghanistan. Finally, there is the practical fact that the Kham-i-Ab of the Afghans occupies almost the identical geographical site of the 'Khodsha Salor' of the Russians. Extraneous arguments may be easily introduced into the case by irresponsible writers; but these are really all the considerations that need affect the judgment of the two governments.

#### PACIFIC COAST WEATHER.

LIEUT. W. A. GLASSFORD, in charge of the Pacific coast division of the signal service at San Francisco, has lately presented a paper to the California academy of sciences on 'Weather types on the Pacific coast.' These types differ from those of the eastern United States in their relative lack of progressive motion, and consequently in their duration and in the less variability of the weather. Distinct areas of low pressure are rare in southern California, but increase in frequency northward, until they are most numerous about Vancouver's Island. The types recognized for the rainy season (winter) are, 1°, North Pacific cyclonic; low pressure over Oregon and Washington, high pressure in the Great Basin, with southerly gales along the coast, and general rains, heaviest in the north; 2°, interior anticyclonic; like the preceding, but with less distinct cyclonic conditions; the temperature is high with south-easterly winds; the warm 'Santa Anna' winds of Los Angeles occur under this distribution of pressures; 3°, North Pacific anticyclonic; high pressure in the north, and low in the south, giving clear weather with light, variable winds in the north, but with high winds and southerly gales on the coast of California; warm days and cool nights, often frosty;

the dreaded dry 'north wind' of the Sacramento and San Joaquin valley prevails at this time; 4°, general cyclonic; a rare type, with very low pressure on the coast, giving severe storms of high southerly winds and heavy rain; 5°, South Pacific anticyclonic; moderately high pressure along the south-western coast of California, and no distinct centre of low pressure visible, but giving southerly rain-bearing winds; 6°, sub-normal type; irregular isobars and no decided gradients, with variable winds and weather. During the dry season (summer), the weather is very constant, with high pressure to the north-west over the cool ocean, and low pressure over the hot land to the south-east, northerly winds and no rain. The change from the wet season to the dry is indicated when the air temperature on the coast rises permanently over the ocean temperature. Lieutenant Glassford has also compiled an extended table of the rainfall on the Pacific coast from all sources, including some two hundred stations with records varying from one or two years up to thirty-seven (San Francisco and Sacramento). This was published in the San Francisco daily *Commercial news* for July 1, 1886. The maximum precipitation is given for Neah Bay, Washington Territory, where the annual average of nine years' record is 110.12 inches. Many other stations in the north exceed fifty and sixty inches a year. In the south, the minimum falls nearly to two inches, being 2.56 at Yuma, Arizona, from an eleven-year record. The lowest of all is a three-years' average for Bishop Creek, Cal., where the annual precipitation is only 1.31 inches. The table gives the months separately, as well as the yearly total, so that the seasonal variation is well brought out. In July and August only nine and ten stations respectively have over an inch of rain, and these are all in the north or in the interior; while no rain at all is given for eighty-two and ninety stations, and a number more have only a trace or one or two hundredths of an inch.

#### DR. ROMANES ON PHYSIOLOGICAL SELECTION.

DR. GEORGE J. ROMANES, who, in more than a literal sense, may be said to be the legatee of Darwin, publishes in *Nature* (Aug. 5, 12, 19) an abstract of a paper read before the Linnean society, entitled "Physiological selection: an additional suggestion on the origin of species."

The necessity of such an additional principle is made evident by considering three objections to natural selection as a theory of the origin of species. 1°. The difference between species and varieties in respect of mutual fertility. It is a fact