

given proof of their organizing power. They brought together a national congress composed of delegates from every political society of any importance throughout the country. Seventy-one members met together; twenty-nine great districts sent spokesmen. The whole of India was represented, from Madras to Lahore, from Bombay to Calcutta.

For the first time, perhaps, since the world began, India as a nation met together. Its congeries of races, its diversity of castes, all seemed to find common ground in their political aspirations. Only one great race was conspicuous by its absence; the Mohammedans of India were not there. They remained steadfast in their habitual separation. They certainly do not yield to either Hindoo or Parsee in their capacity for development, but they persistently refuse to act in common with the rest of the Indian subjects. Not only in their religion, but in their schools, and almost all their colleges, and all their daily life, they maintain an almost haughty reserve. The reason is not hard to find. They cannot forget that less than two centuries ago they were the dominant race, while their present rivals in progress only counted as so many millions of tax-paying units who contributed each his mite to swell the glory of Islam.

But in spite of the absence of the followers of the prophet, this was a great representative meeting. The delegates were mostly lawyers, schoolmasters, and newspaper editors, but there were some notable exceptions. Even supposing these three professions alone provided the delegates, the meeting would fairly represent the education and intellectual power of India. Not a word was said of social reform; all they discussed, and all they demanded, was political power and political changes; a tone of most absolute loyalty pervaded all the proceedings. Education and material prosperity, order, security, and good government, were all incidentally mentioned as causes of gratitude towards the present rulers. But such allusions were only by the way. Every desire was concentrated on political advancement and an immense increase of the share at present given to the natives of India in the government of their own country. The question of their ability to govern themselves was never even touched upon by the wisest of the speakers. Though there was much crude talk, much of that haste which only makes delay, and that ignorance which demands premature concessions, and too implicit reliance upon legislative powers, there was also much of most noble aspiration, and a sense of patriotism and national unity, which is a new departure in the races of the east.

PREJEVALSKY'S EXPLORATIONS IN MONGOLIA.

THE renowned traveller and explorer, Colonel Prejevalsky, to whom a reference is made in our St. Petersburg letter, arrived there on his return journey from Mongolia, the earlier part of the present month. A correspondent of the *London Times* says that this expedition of Colonel Prejevalsky, lasting two years, and costing over 43,000 roubles of government money, has been the most remarkable one ever undertaken in the wilds of Mongolia and Tibet. The intrepid explorer, as his published letters have already shown, literally fought his way into these inhospitable regions, at the head of a well-armed party of thirteen Cossacks, four grenadiers, and a host of other attendants; and, as he stated at Moscow, more than one hundred natives, who at different times waylaid the explorers, were made to feel the deadly effects of the Berdan rifle-fire. The exact numbers of the killed and wounded were stated in the extremely interesting letters addressed to the Grand Duke, at various stages of the journey. This is scientific exploration with a vengeance, and goes beyond any thing that Mr. Stanley did with his 'six-shooter' among the negroes of Africa.

In the last of the above-mentioned series of letters, the colonel also expressed the ardent wish of the Mongolian natives to be taken under Russian protection, and shielded from Chinese oppression. The same idea he has again impressed upon his friends, in answer to their many inquiries, as they greeted the tall, sun-burnt traveller. The *Viedomosti*, referring to this, says, "Among the natives visited by Colonel Prejevalsky there exists a deep conviction that sooner or later the 'great white czar' will enter their country and take them under his domination. At one place the explorer showed a portrait of the emperor to one of the natives, who went into raptures over it, and soon large crowds of inhabitants, with women and children from the neighboring districts, gathered round the colonel and implored him to show them the likeness of the 'white czar.'"

The regions visited by Colonel Prejevalsky are generally supposed to be, nominally at least, within the dominions of the emperor of China. No wonder, therefore, that rumors of a protest have come from Peking. The grenadiers who accompanied the expedition have been promoted, and, besides receiving pecuniary gratifications, have had their portraits distributed throughout the regiment. Colonel Prejevalsky has given a number of Russian names to newly-discovered places, such as the 'Moscow-Chain,' the 'Kremlin

Rock,' and the 'Czar-liberator's Mountain.' One hundred and fifty photographs and sketches were taken, and a large number of geological and other specimens were collected. The expedition will no doubt have important scientific, and perhaps other results.

THE U. S. GEOLOGICAL SURVEY.¹

THE plan of this volume is the same as that of its predecessors, comprising, first, the summary report of the director; second, brief administrative reports of the chiefs of divisions on the work accomplished in the several departments of the survey, with brief itineraries of the field-parties; and, third, the accompanying papers, which make up the main part of the volume, and are the only feature of permanent interest or value. These papers are the monographs or final reports finished during the year. The longer monographs appear here in abstract form only, being, like the more fragmentary bulletins, published separately for the use of specialists. But, although the annual volume is not a perfect *résumé* of the survey, it is wisely designed to present all the results of interest to the general reader.

The principal feature of Major Powell's summary report for 1882-83 is the preliminary statement of the proposed topographical and geological map of the United States, with the accompanying map showing the, for the most part, very limited areas which have been surveyed under the authority of the various states and of the general government, on a scale suitable for the present purpose. The scale adopted for the proposed map is 1:250,000, or about four miles to the inch, with contour lines for every twenty-five to two hundred feet, according to the character of the topography. It is proposed to publish this general map in atlas sheets, each being composed of one degree of longitude by one of latitude, in areas bounded by parallels and meridians.

Although the administrative reports indicate a larger amount of topographic and geologic work than for any previous year, the published results are comparatively meagre, the monographic portion of this volume falling decidedly below the average in extent, if not in general interest. The most important paper has only an indirect relation to the geology of the United States. This is Captain Dutton's able memoir on the volcanoes of the Hawaiian Islands. This work was not done at the expense of the survey, nor in anticipation of the annexation of the island kingdom to this

country, but simply as a preparation for the study of the gigantic lava-flows of the Cascade Range in northern California and Oregon, — a work upon which Captain Dutton has since been engaged. Hence criticism of the survey for extending its operations beyond its legitimate field is forestalled, and the publication of this valuable contribution to our knowledge of the noblest of living volcanoes will undoubtedly be justified by the light which it will throw upon the volcanic phenomena of our north-western territories; for, while these are unparalleled among the eruptions of historic times, the evident liquidity and the vast volume of the lava plainly suggest the stupendous flows of Hawaii as the proper preparatory field of the student who would bring to their investigation the best comparisons that modern volcanism affords.

It is impossible here to do justice to the graphic descriptive chapters, which fully sustain the reputation achieved by the author for the bold and discriminating portrayal of geologic phenomena, in his reports on the plateau country and the Grand Cañon. But the highly important and original chapter on the volcanic problem may not be disposed of so summarily. Captain Dutton has here gathered together the principal facts and conclusions reached in his study of Mauna Loa and Kilauea, with a view to ascertaining whether they shed any new light upon the dark problem of the volcano. He goes to the root of the matter at once by calling attention to the fact that the volcano is essentially a heat problem, and that the final solution to be sought is an explanation of the origin of this heat and its modes of action.

The universal postulate that the earth's interior is throughout in a state of incandescence is accepted as a matter of course; but the question as to whether it is mainly liquid or solid is regarded as still in abeyance, and the determination of this point is not considered essential to the discussion of the volcanic problem. Against the view that the penetration of water to the seat of the internal fires is the cause of volcanic action, two objections are urged. 1°. The access of cold water would cool, and probably solidify, the lava. It might be claimed on the other side, however, that the water must be itself very hot before it reaches the lava, and that aqueo-igneous liquefaction takes place at much lower temperatures than dry fusion. The vaporization of the water would, however, absorb a large amount of heat. 2°. But this last consideration is rendered unimportant by the second objection; viz., that liquid water cannot pass the isotherm of 772° F. (the temperature of its critical point), and hence must be vaporized long before it reaches the lava.

That aqueous vapor may penetrate to the reser-

¹ *Fourth annual report of the U. S. geological survey to the secretary of the interior (1882-83)*. By J. W. POWELL. Washington, Government, 1884. 8°.