

THURSDAY, OCTOBER 14, 1880

## THE INDIAN FAMINE COMMISSION

THE recently issued Report of the Government Commission appointed some time ago to inquire into Indian Famines is of great practical value and full of suggestiveness as to the lines which further inquiry should pursue. This first part of the Report relates to Famine Relief, and bears evidence that the Commission have done their work with great thoroughness and breadth of view, and the results are recorded with clearness and method. On the question as to what measures of relief would be the most effectual to adopt, we need not touch here; no doubt they will receive attention in the proper quarter. The discussion of the various questions involved is prefaced by an excellent concise sketch of the geography, population, and climate of British India. Here also some important information is given as to the degree in which each part of the country is exposed to famine. This is followed by a statement of the measures which, in the opinion of the Commission, it would be advisable to adopt for famine relief, and a very complete and instructive review of past famines and the measures adopted to meet them. The immensity of the problem with which the Commission had to deal may be learned from the fact that the total area of British India is about one and a half million square miles with a population of 240 millions. Of this, 900,000 square miles, with a population of 190 millions, is under direct British rule, the remainder belonging to the native States. The great bulk of this population belongs to the classes on whom the dire effects of famine are sure to fall, so that the responsibility of our government in the matter cannot be magnified; they are bound to leave no means untried either to prevent the recurrence of famines or to meet them effectually if they do occur. The Commission, of course, could not but come to the conclusion that the devastating famines to which the provinces of India have from time to time been liable are in all cases to be traced to the occurrence of seasons of unusual drought, the failure of the customary rainfall leading to the failure of the food crops on which the subsistence of the population depends. The Commission have therefore justly conceived it to be an important part of their inquiry to ascertain what can be known as to the periodicity of rainfall throughout the year, and over periods of greater extent if possible. The yearly periodicity of rainfall in India and other tropical countries is well known. In India a strongly marked yearly periodicity is everywhere observed, the chief fall occurring, with few exceptions, in the summer months, between May and October, in the season commonly known as the south-west monsoon. On a part of the Madras coast, on the east of the peninsula, heavy rain falls after the cessation of these summer rains, in the months of November and December, at the beginning of what is termed the season of the north-east monsoon. In the more northern provinces, again, a well-marked season of winter rain occurs, commencing about Christmas and extending to February, but its effects hardly reach south of the tropic, and it has no sensible influence on the agriculture of Southern India. The

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main agricultural operations of the country correspond with these principal seasons of rain, and their relative importance is in a great degree dependent on the local distribution of the rainfall at the various seasons of the year, as the period and amount of rain differ much in the several provinces of India.

A most valuable feature of the Report is the numerous excellent maps which accompany it, and which are a great assistance to understanding the results of the inquiry. One map, for instance, shows the general features of the distribution of annual rainfall. The fall on the Western Ghats and on the tract between them and the sea is very heavy, being from 70 to 100 inches at the sea level, and as much as 250 inches on the mountain face exposed to the south-west rain-bearing winds. Along the east coast of the Bay of Bengal, and in the eastern districts of the Bengal Province, as also along the foot and outer slopes of the Himalaya throughout its whole extent, the rainfall is also extremely heavy, reaching 100 inches or more. Subject to these exceptions, it may be said generally that the portion of India east of the 80th meridian has a rainfall of more than 40 inches, while the portion west of the same meridian has less than 40 inches. The region in which the fall is less than 30 inches includes almost the whole of the Punjab, a considerable part of the North-West Provinces, a large part of Rajputana and Kathiawar, as well as almost the whole of the Deccan and Mysore. In Sindh and in the southern portion of the Punjab and most western part of Rajputana the rainfall is extremely small and irregular, being less than 15 inches. Of the area in which the rainfall is below 15 inches, it may be said that it is either actual desert or that agriculture is impossible without artificial irrigation; and hence it has followed that where the rain is least copious the population has made itself in a great degree independent of the local rainfall. In the opposite direction it is also generally true that where the rain is most abundant, exceeding 40 or 50 inches, the occurrence of such drought as will cause serious scarcity is rare. The region in which the average rainfall is between 20 and 35 inches is that which suffers most from droughts. Here, though on the average of years the rain is sufficient to support an agricultural population, the greater deficiencies which reduce the quantity below what is essential, as well as the smaller which seriously damage the crops, are so frequent as to lead to repeated seasons of scarcity of greater or less severity. From this it can easily be ascertained what are the parts of the country most subject to drought. These are (1) the western and southern parts of the North-Western Provinces and that portion of the Punjab territory which lies east of the Satlej; (2) the western and northern States of Rajputana and of the central plateau which border on the North-Western Provinces; (3) the districts of Bombay above the Western Ghats, and the districts of Madras above the Eastern Ghats, together with the southern and western region of Hyderabad and all Mysore, except the strip lying close along the Western Ghats; (4) the districts of Madras along the east coast and at the extremity of the peninsula. The more detailed account of the known droughts of the past hundred years, which are given, show how frequently the region whose total rainfall is from 20 to 35 inches has been subject to severe scarcity, and that within it have

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occurred the great famines of 1837-38 in the North-West Provinces, of 1868-69 in Rajputana, and of 1876-77 over nearly the whole of the peninsula of Southern India. These droughts were mainly due to the failure of the south-west monsoon. The drought of 1865-66, and some of the earlier scarcities in Madras, arose from failures of the rain of the north-east monsoon on the east coast, a failure which in 1865-66 extended into Western Bengal. The famine of 1873-74 in Northern Bengal was exceptional, and is an instance of a great scarcity suddenly arising in a region of abundant average rainfall. This drought arose from a premature cessation of the rain, apparently due to an abnormal extension to the eastward of the margin of the comparatively dry area of North-Western India.

The Report touches briefly on a part of the subject which we deem of the greatest importance, namely, the supposed periodicity of fluctuations in the rainfall from year to year. These, the Report states, are in all parts of the country very considerable, variations of as much as 50 per cent. on either side of the average being often registered. The Commission refer to the opinion of those "qualified by their scientific knowledge to judge of such matters that there is evidence of these fluctuations being in some measure synchronous with those periodical variations in the condition of the sun which are indicated by the varying extent or number of sun-spots; and the recurring cycle of about eleven years, with which prolonged observation has shown that the period of sun-spot variation on the average accords, has been thus considered to correspond to the annual variations of the rainfall, the maximum and minimum of the one approximating in period to those of the other."

Of course the Commission, in the present unsettled state of this all-important question do not feel themselves justified in recommending any anticipatory measures to be taken in view of the probable recurrence of famine, on the basis of this theory. The subject, it is admitted, is scarcely advanced enough to warrant such recommendations. What they do recommend, however, demands the serious attention of the Indian Government. They state that the subject "is one deserving of careful investigation, and that it does not seem contrary to reasonable expectation that some relation should be established between the variations of the rainfall from year to year and those of the conditions of the sun's surface, on the heat derived from which, unquestionably, all terrestrial meteorological phenomena closely depend. For various reasons India is a country in which the investigation of this matter may be carried out with especial facilities, and for this reason (though other grounds are not wanting) we would urge that, as the expense of such researches would be small, the measures which have recently been taken by the Government of India to carry them out should be continued, and even extended in the future."

"As at present no power exists of foreseeing the atmospheric changes effective in producing the rainfall, or of determining beforehand its probable amount in any season, such as would admit of timely precautions being taken against impending drought, the necessity becomes the greater for watching with close attention the daily progress of each season as it passes, for ascertaining with

accuracy and promptitude the actual quantity of rain in all parts of the country, and for forming the best and earliest judgment possible from the facts as they occur, whether the supply will be sufficient or otherwise. For the present at least, so far as the rainfall directly affects the subject under consideration, these are the only precautions that appear possible. Within the last few years a very satisfactory system of meteorological observations has been established all over British India, and in our opinion it is of primary importance that it shall be maintained in complete efficiency, and shall so far be strengthened and improved as to insure the early and punctual supply of information to the executive governments, and to the officials in all departments concerned with the agriculture of the country or the preparations required to meet famines, as to the actual progress of the periodical seasons of rain in all parts of the provinces for which those governments or officers are respectively responsible. So far as it may become possible, with the advance of knowledge, to form a forecast of the future, such aids should be made use of, though with due caution.

"We are also satisfied of the importance of the diffusion of more sound and accurate knowledge of the causes and mode of occurrence of the periodical rains, on which the well-being of India is so largely dependent, not only among the officers of the Government, but also among all classes of the community. Any measures which the Government may find possible with a view to the publication and diffusion of such knowledge cannot fail to be highly beneficial."

We shall look with interest for the further information on this subject, which is promised in the appendix to the Report. We need not add anything in support of the strong recommendation of the Commission. The Government would certainly not have appointed them at all unless it meant to take action upon their recommendations, and surely no line of inquiry is more promising, or could be fraught with more useful results. If the laws (for there can be no doubt that such exist) which regulate the periodicity of droughts can be clearly ascertained, it would reduce to the limit of simplicity the measure to be adopted either to prevent the occurrence of famines or to be prepared long beforehand to prevent their natural consequences.

Other recommendations of the Commission are quite in keeping with that to which we have just referred. They advocate the introduction of a more scientific method into administration and statistics, the institution of a separate agricultural department, and the need of improved agricultural, vital, and economical statistics.

Besides the map already mentioned, there are others showing the extent and comparative severity of the famines in various districts of India, from the beginning of the century downwards. Altogether the Commission have faced their task in a thoroughly business-like and scientific method; while they have sought information from every quarter likely to yield useful results, they have never lost sight of the object they had in view, and their Report is likely to be of permanent value. We shall look for the further record of their proceedings with the greatest interest.