

pressure burst is fairly well understood by those who have to deal with these very dangerous phenomena. One short paper deals with "Rock Bursts Prevention", but it would seem that the author has not really succeeded in preventing these serious accidents. The volume may be strongly recommended to all interested in deep-level mining problems.

#### Missions in New Spain

INTEREST inspired by the archæology of Mexico and Central America is apt to divert attention from the study of the Indians themselves who lived in these regions, and the effect on them of the clash of cultures which arose out of the Spanish conquest, both at the time and in their subsequent history. It is, in fact, only comparatively recently that it has been realised that the customs and beliefs of the Indian of to-day present an unrivalled field for the study of syncretism in culture and religion. The possibilities of such study are suggested, for example, by a recent publication of the Institut d'Ethnologie of Paris, "La Conquete spirituelle du Mexique", by M. Robert Ricard (*Trav. et Mem.*, 20), in which it is remarked that the failure of the Church to establish a native priesthood as part of the campaign of Christianisation has never ceased to affect the course of history in the country down to this day by segregating the native population, even though the Spaniards were never affected by the colour-line in the accepted sense. M. Ricard's able study of the Catholic missions in Mexico from 1523-4 until 1572, that is, from the first arrival of the mendicant friars, after the conquest of Cortez, down to the arrival of the Jesuits, is based on a careful study of early records. It has, as one side of the picture, the culture of the Indians whom the friars sought to convert, as seen through the eyes of writers such as Sahagun, who recorded native customs for the instruction of those whose duties called them to the work. M. Ricard's researches have placed the early work of the Church in a more correct perspective than has hitherto been possible.

#### Studies of American Social Areas

THE thoroughness and detail with which American investigators carry out their inquiries is well exemplified in a series of bulletins recently published by Cornell University Agricultural Experiment Station, dealing with the social and economic characteristics of various counties in New York State. In one of these bulletins written by Mr. H. C. Hoff-sommer and entitled "Relation of Cities and Larger Villages to Changes in Rural Trade and Social Areas in Wayne County, New York", it is explained that the villages with a population of 500 persons or less have suffered severely from the competition of the larger villages. The smaller villages, however, have maintained their status better socially than economically, and it is interesting to note that the average distance travelled is shortest for church attendance and greatest for the purchase of women's dresses. The data show that social life at present is carried on in relatively small areas. That it will always be

so does not follow, and a trend towards the uniting of small social areas into larger ones is evident. But the expansion of the social areas has been much less marked than that of commercial areas. This leads to the conclusion that although churches, schools, and other social and educational agencies may unite for better and more effective work, the areas which they can effectively serve will remain relatively small as compared to those of the more specialised economic services.

#### Showers of Fish

FOR more than two thousand years, occasional showers of fish are said to have occurred in various parts of the world, but especially in India, in stormy, or at least showery, weather. In the *Journal of the Asiatic Society of Bengal* (29, No. 1; 1933), Dr. Sunder Lal Hora discusses Indian examples of the phenomenon, and gives references to papers dealing with these, some of which appeared more than a century ago. He also considers various explanations that have been advanced, and obviously inclines to the one according to which the fish in such a shower are sucked up from a pond or river by a waterspout and are deposited on the ground when the waterspout collapses. There is on the face of it no obvious objection to the theory, for the waterspout does sometimes occur in India, when the funnel-shaped tornado cloud that occasionally depends from a cumulo-nimbus cloud passes over any inland sheet of water. Dr. Hora's paper is followed by one by S. N. Sen, who for a number of years was on the staff of the Meteorological Office, London. Sen examines the meteorological conditions over India at the time when a recent shower of fishes was reported from the Muzaffarpur District, Bihar, on July 10, 1933, and finds that they were such as would frequently give rise to very disturbed cyclonic weather and violent thunderstorms, and that some notably heavy rains occurred on the day in question. The theory favoured by Dr. Hora remains, however, to be proved. One is tempted to think that what has generally been observed has been heavy rain and afterwards many small fish on the ground, but not a shower of fish, and that the minds of native observers of the two separate phenomena have been affected by mythological beliefs that seemed to offer an explanation of what had been observed. Dr. Hora refers to such a myth (a Hindu myth) connected with the rain-god Indra, according to which the waterspout is the trunk of one of Indra's elephants (the rain clouds are believed to be his elephants), who are engaged in sucking water up from the underworld during a storm in which the funnel cloud appears.

#### Forest Fires

DURING last year's drought, fires caused considerable damage in plantations in Great Britain; also to the beautiful heaths and commons which form so picturesque a feature of certain English counties. This year, apart from official statistics, the reports in the Press afford evidence that this fire damage



persists. When forest conservation was introduced into the tropical and sub-tropical portions of the British Empire, fire protection was considered to be one of the first important steps to inaugurate. The success achieved in India in this respect is well known; but, efficient and energetic as the forest service of that country showed itself in the fine system of fire protection introduced into the State forests, it would never have achieved success without vigorous official support. A Science Service Mail Report (Washington, D.C., July 30) states that owing to the drought, there has been a 66 per cent increase in forest fires for 1934 over the average of the past three years. National and State forests have, it is said, become like tinder in a great many areas, and the smallest spark is sufficient to light them. In 1933, there were 140,722 fires, the area burnt being 43,889,820 acres, the total damage being estimated by the U.S. Forest Service at 60,274,960 dollars. If the number of fires increases at the same rate as already experienced this year, the totals will exceed those of 1933. Attention is directed to the fact that a sum of 75,000,000 dollars has recently been earmarked for the 1,300 mile shelter belt of trees extending from the Canadian border to Texas, and the work is expected to continue for ten years. A comparison of the annual expenditure on this new forest belt with the destructive losses from forest fires shows that eight times the money spent each year for the next decade on planting trees would barely equal the value of the loss by fire in 1933.

#### Field Museum of Chicago

THE Field Museum of Natural History, one of the most progressive in the world, has suffered from the adverse financial conditions of the times, which have brought about declines in the value of securities held in endowment funds and reduction in income from endowments, contributions and memberships. Schemes of expenditure have had to be very much curtailed and economies enforced, but the result has been a gratifying reduction of the deficit carried forward from the previous year. Part of the success was due to the influx of visitors to Chicago for the Century of Progress Exposition, for the museum visitors for 1933 numbered 3,269,390, an annual attendance exceeding that ever attained by any museum in the United States, and probably a high record for the world. The growing fame of the Field Museum has something to do with its success. Consider the two major exhibits opened to the public in 1933: one, the Chauncey Keep Memorial Hall containing sculptures representing the principal races of mankind, and the Hall of the Stone Age of the Old World, with its restorations of types of prehistoric men and phases of their cultures. Both these new halls are unique—no other institution has exhibits illustrating these subjects on the scale of the Field Museum. In the zoology halls there were added natural groups of African lions, gaurs or seladangs of Asia, Florida manatees, orang-utans, bowerbirds, and many series not treated as natural groups. Expeditions and field work had to be avoided

except where they were financed by special funds contributed for the purpose; even so, zoological collecting was carried on in Guadalupe Island, in Guatemala and in West Africa, fossil collecting in Colorado and the eastern States, and archaeological excavations on the site of the Lowry ruin in south-western Colorado.

#### Agriculture in New Zealand

IN opening the annual Dominion Conference of the New Zealand Farmer's Union at Wellington, Lord Bledisloe, the Governor-General, reviewed some of the current problems of the agricultural industry. After expressing the view that in no other country has the farmer brighter prospects, he urged the need for 'planning' control if economic success is to be realised. The lack of uniformity that still exists in both the dairy and cattle industries of New Zealand is preventing the extension of markets, and the elimination of second-rate produce must be effected as soon as possible. This cannot be brought about by Government intervention or control, but lies in the hands of the farmers themselves. Comparison with successful agricultural countries, such as Denmark, shows that this type of self-organisation is the most satisfactory. Speaking with reference to the cattle industry, Lord Bledisloe deplored the continuation of the embargo imposed on the importation of British livestock. The measures adopted in Great Britain for the suppression of epidemics such as foot-and-mouth disease are so drastic, he said, that the risk of introducing this complaint into New Zealand is nil. On the other hand, the loss to their cattle industry (especially in view of the present hopeful prospect of a remunerative trade in chilled beef and bacon pigs) is a very serious matter. In general, the outlook for the future is a hopeful one, but harmonious co-operation between town and country, factory and farm must be achieved if a lasting prosperity is to be assured.

#### Abattoir Design

A REPORT on abattoir design has recently been issued (Economic Series, No. 40. H.M. Stationery Office. Price 1s. net) by a technical committee appointed by the Ministry of Agriculture and Fisheries last December to consider the output, structure, layout and equipment of factory abattoirs. The Committee recommends that the principal characteristics of a factory abattoir should be single control, specialisation of labour, continuous process, the killing being spread fairly evenly over at least four days of the week, and a uniform condition and appearance of the finished product in place of the variations at present existing in the condition not only of the meat but also of the by-products. The Committee prefers a multi-floor factory abattoir to the single floor type found in nearly all the public abattoirs in England, on grounds both of hygiene and economy. It is recommended that in order to raise the general level of the condition of home-killed meat, all the meat and red offals should be adequately cooled before removal. Provision should also be made for