of any useful inventions going waste or of their being exploited by others without an adequate and equitable reward. This will facilitate the progress of negotiations between inventors and manufacturers for the purpose of commercially developing the inventions to their mutual benefit.

So far we have dealt with the subject of Patent System in relation to the research worker and have shown, that viewed at from all points of view, the Patent System provides the best form of securing the objectives of an inventor irrespective of whether he is actuated by altruistic motives or by motives of self interest. This is of course subject to the provision that proper steps and precautions are taken to secure a valid patent. What these steps and precautions are will be discussed in subsequent parts of the article.

ON THE MALABAR CYCLONE OF MAY 1941

BY

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(Meteorological Office, Poona)

RARELY do the cyclonic storms coming direct from the sea strike the Malabar coast. Since 1845, there have been only three storms which have developed in the Arabian Sea and hit Malabar. A few others, however, after forming in the Bay of Bengal have moved westwards across Malabar into the Arabian Sea. The storms of the first type cause more destruction in the coastal districts than the others, as they come straight from the sea without losing any of their energy in crossing the Ghats. The cyclone which struck Malabar on the 26th May 1941, belonged to the first type. A brief history of its development and movement is given below:—

On the morning of the 22nd May, the upper winds over Minicoy were blowing at 25–35 m.p.h. from the westsouthwest up to 2·0 km. and Colombo reported rough seas and 6″ of rain. These observations suggested that the southwest monsoon was advancing in the southeast Arabian Sea. The monsoon continued its progress during the course of the day and burst on the Malabar coast by the next morning; Trivandrum reported 10″, Cochin 7″ and Calicut 5″ of rain on the morning of the 23rd. Pressure started falling along the Malabar coast from the 23rd, the fall being greatest near Trivandrum on the 24th. On the morning of the 25th, an area of negative pressure departures appeared off the Malabar coast. The upper winds over Minicoy were blowing this morning from the west with gale force at least up to 1 km. while those over Mangalore, which on the previous day were blowing at 15–20 m.p.h. from the south or southwest, had strengthened to 20–30 m.p.h. and backed to south or southeast at all levels up to 4 km. These observations indicated that a depression had formed in the southeast Arabian Sea with centre near Amini Devi. By 17 hours of the 25th, the upper winds over Minicoy and Mangalore strengthened further and the seas along the Malabar coast became rough, pointing to an intensification of the depression into a cyclonic storm. Till 15 hours of the 26th, the cyclonic storm remained practically stationary with centre near Amini Devi. Then it began to move eastwards and was centred close to the coast south of Calicut at 22 hours I.S.T. It struck the coast about 30 miles to the south of Calicut (near Ponnani) just before midnight. Calicut recorded a pressure deficiency of about 0·27″ when the cyclone crossed the coast. The barometric depth at the centre of the storm might have been about 0·50″. After

entering land, the storm weakened rapidly and finally blew itself out in the Palghat gap by the next morning.

The weather charts showing the positions of the storm at 17 hours and 22 hours on the 26th are reproduced in Figs. 1 and 2.

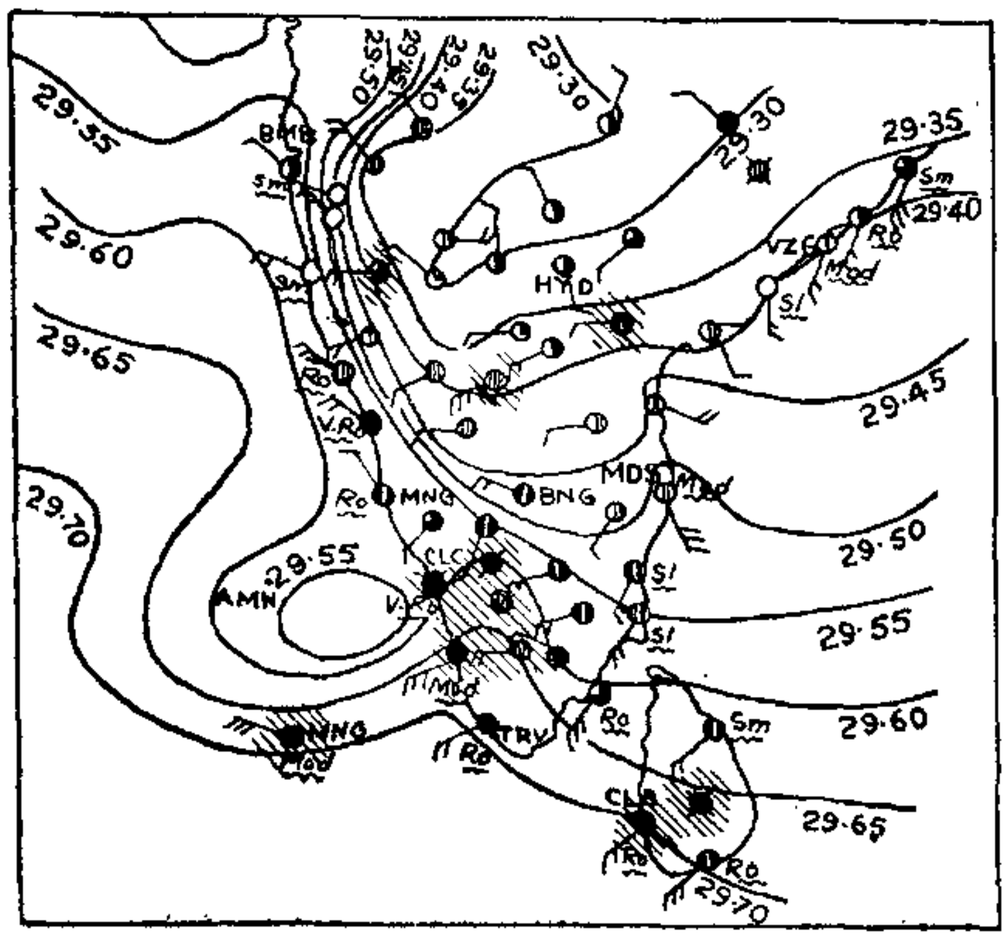

FIG. 1
26th May 1941 at 17 hrs. I.S.T.

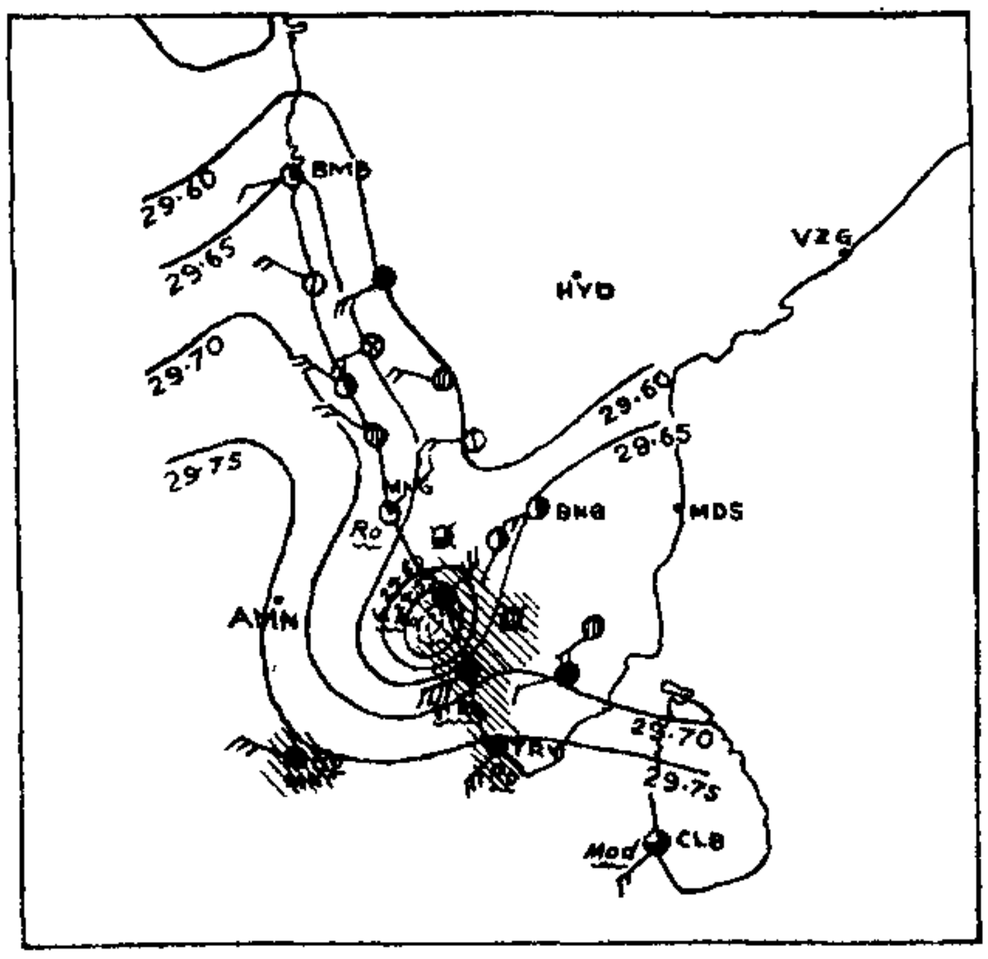

FIG. 2
26th May 1941 at 22 hrs. I.S.T.

Three feathers to the wind arrows mean a wind speed of 22–27 m.p.h. and four feathers 34–40 m.p.h. The hatched areas represent regions where rain was falling at the time of observation.

The following extracts from the Weather Diary of the Cochin Observatory which lay in the monsoon sector of the cyclone will be of interest:—

"By 7–30 p.m. (26th) the wind began to increase in violence and was coming in great gusts from WNW (6 Beaufort scale) each gust increasing in force to a storm" ..... "By 10 p.m. the wind had again shifted to WSW (30–40 m.p.h.) still increasing in violence" .....

"The storm continued to increase in violence after 00·00 hours." ..... "The average speed of the wind from 00·00 hour to 12 hours when the storm was at its severest was 48 m.p.h. and the speed of the gust at their highest is *estimated* to be about 80 m.p.h." .....

The cyclone was responsible for widespread and locally heavy rain along and near the Malabar coast on the 26th and 27th. Some of the noteworthy falls were Quilon 5", Calicut and Ankamally (Perambavoor, Travancore) 6" each, Mannar (Travancore) 8" on the 26th and Vadakhancheri (Cochin) 10" on the 26th and another 12" on the 27th.

According to press reports, the cyclone caused terrible havoc along the Malabar coast, particularly in the district of Malabar. In addition to the loss of about one hundred lives, a large number of persons are reported to have been seriously injured. The damage to property was also large. In the coastal areas, thousands of houses and huts and a number of bridges and culverts collapsed and several villages were swept away. The Taluk of Ponnani in the Malabar District suffered most in this respect. The agriculturists are reported to have suffered heavy losses by the destruction of their gardens and growing crops. In a few places, landslides also occurred burying valuable arable lands.

The storm was of small extent. Even when it was only about 40 miles from Calicut the strongest surface winds along the coast blew at 30–40 m.p.h. in gusts. The area where the winds reached a speed of 40 m.p.h. and more was probably confined to a radius of about 40 miles.

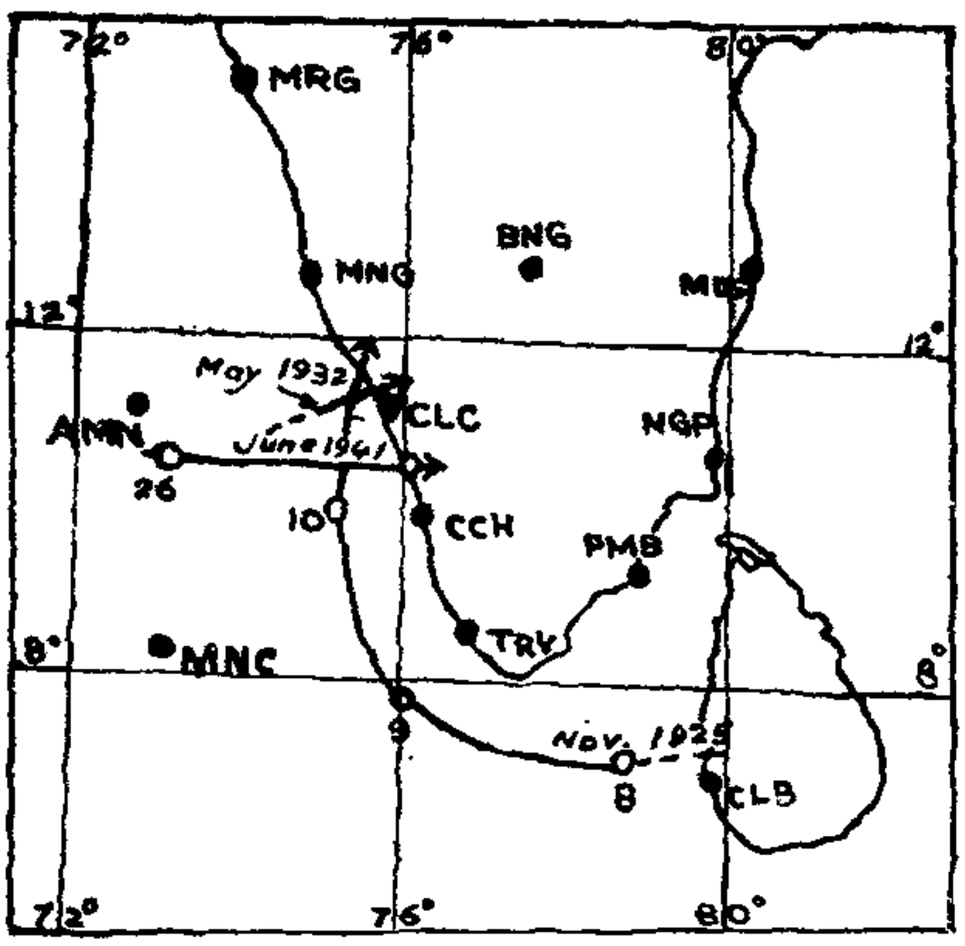

FIG. 3

Tracks of Malabar Storms.

In the absence of information about weather from ships, it is difficult to say when the storm developed the core of hurricane winds around its centre. The microseisms recorded at the Bombay Observatory however seem to show that the storm became severe after it started moving towards the coast.

The tracks of the cyclones that have struck the Malabar coast since 1845 are shown in Fig. 3. It will be seen that the recent cyclone followed an easterly course before striking the coast. This was very unusual, as the storms which originate in the southeast Arabian Sea generally travel in a northerly direction. Indeed, there has been only one other instance of a storm taking an easterly course in the southeast Arabian Sea—that of May 1932, shown in Fig. 3. It is interesting to note that, even the recent cyclone, in the earlier stages, tended to move towards the north. But, in the end, it decided to move eastwards and release all its energy in Malabar; and it did—with what disaster!

RAI BAHADUR PROF. K. C. MEHTA, Sc.D.

WE have great pleasure in congratulating Professor K. C. Mehta, Rai Bahadur, M.Sc., Ph.D. (Cantab.), F.N.I., of Agra College, Agra, on the award of the Sc.D. Degree of the University of Cambridge. It is a rare distinction and is a just recognition of the valuable contributions made by the Professor to our knowledge of the wheat rust problem of India. Notwithstanding heavy duties at the College, he has been conducting, since the year 1923, research on the various aspects of an obscure problem of great national importance, at considerable personal expense in the earlier stages of this work. Since 1930, these investigations have been continued with adequate grants from the Imperial Council of Agricultural Research and with the help of temporary research staff. After a comprehensive study of the parasites concerned, Prof. Mehta has been able to suggest simple and inexpensive methods of control of rust epidemics on wheat and barley. Prof. Mehta presided over the Botany Section of the Indian Science Congress in 1929.
