in the localities on the line of advance very steep pressure gradients for which there are corresponding winds. The violent winds may therefore be attri­buted to the breakdown of the dynami­cal system under the stress of these local differences of pressure.

From this point of view the pheno­mena of the line squall are to be regarded as a development of the ordinary phenomena of the V-shaped depression. A sudden change of wind and a Une of rain that pass over the country with the velocity of the same order as that of the following wind are quite common features of the S.W. quadrant of a cyclonic depression, and they, too, seem to point to the juxta­position of currents of different tem­perature coming from different regions but forming adjacent components of supply for the depression.

Examples of all degrees between the comparatively unimportant rain line and the most violent tornado-like squall could be put side by side with cases in which the typical pressure, temperature and weather changes are accompanied by a sudden lull in the wind, as in the example quoted in the *Life History of Surface Air Currents* (Μ. O. publication, No. 174, 1906). An example of a Une squall in its most

violent and destructive form is shown in the records for the 1st of June 1908. In the record for Kew the squall of wind which destroyed a number of the trees of Bushey Avenue is shown as lasting for a very long period (fig. 6).

A line squall of historic interest is that which capsized H.M.S. “ Eurydice ” off the Isle of Wight on the 24th of March 1878. The occurrence is discussed by the Hon. Ralph Abercromby in 1884 *(Quart. Journ. Roy. Met. Soc.* x. 172) and previously by the Rev. Mr Clementhey *(Symon's Met. Mag.,* April 1878). The shift of wind in this case appears to have been from west to north, and the change in the wind was accompanied by the transitions from fine blue sky to snow. The records at the seven obser­vatories belonging to the Meteorological Council are repro­duced in the *Quarterly Weather Report,* from which fig. 7 is taken.

Whatever explanation may be given of the cause and origin of the phenomena of fine squalls, it must take account of the fact that a first squall is often succeeded by others of a similar character but often of less intensity than the first. After the sudden shift of wind, with accompanying weather changes, the conditions seem to revert more or less to the original state. The warm southerly wind reasserts itself, but is driven out again by another attack, and ultimately the cold wind holds the field. It is easy to suggest, but at present not easy to verify, the course of replacement of the warm wind. Upper air observa­tions in such circumstances with kites or manned balloons are dangerous, both for the apparatus and the observer; but it may be possible to trace the actual course of events by the records of rounding balloons supplemented by observations of the motive balloon by means of theodolites.

Little has been said about the actual force of the wind in gusts or squalls, and in the present state of anemometry it is difficult to