

XIII. *On the late extraordinary depression of the Barometer.* By
LUKE HOWARD, Esq. F. R. S.

Read January 24, 1822.

THE quicksilver having fallen to a lower point in the barometer in the course of last month than any person, probably, remembers to have seen it at, in the neighbourhood of London, a short account of the circumstances may, perhaps, not be unacceptable to the Royal Society.

On the evening of December 24, I found the barometer at 28.20 in. the wind being moderate at S. E., with steady rain, the temp. without, at 8 p. m. 45°. Water boiled freely at 210°. Finding the depression still to continue, I took a portable barometer, on Sir H. ENGLEFIELD'S construction, and having ascertained its height to be, at 11 p. m., 27.96 in., I set it up in my chamber on the first floor. At 5 a. m. the 25th, this instrument gave 27.83 in., and I have reason to think it did not go much lower: the rain had ceased early in the night, and it had become somewhat star-light, with a calm air, and hazy cirrostrati above: soon after five, however, the wind rose again, bringing some rain, apparently from N. W., but there was no tempest that I had opportunity to observe, though it might have blown hard during the few hours I slept. The pencil of my clock barometer travelled precisely to two-tenths below the bottom of the scale, having made a continuous downward sweep of nearly an inch and four-tenths in 24 hours: it appears to have turned to rise

MDCCCXXII.

Q

abruptly, and by 8 a. m. was again on the point of passing 28 inches. In the 24 hours *preceding* this time, there had fallen eight tenths of an inch of rain ; in the 24 hours *following* it there fell none, nor was the wind, which blew from S.W., at all strong ; indeed it was calm all the middle part of the day, with sunshine and cirrus above : evaporation was very perceptible, and the night, up to 10 p. m. starlight. The barometer, at 8 p. m. the 25th, was at 28.40 in. In the early morning of the 27th, not having yet reached 29 in., it turned to fall again, with the wind at S. and S.W., after S.E. : we had again some heavy rain with hail about noon, and by midnight the quicksilver reached 28.07, or .06 in., where it stood, or rather made minute oscillations, *during the 12 hours following*, a thing I should scarcely have thought possible in our climate.

It was stormy, with much rain, and cloudy during most of this interval ; but at noon on the 29th, and from the above-mentioned very low point, the decisive rise began ; which proceeding in a bold uninterrupted curve into the afternoon of the 31st, the quicksilver once more touched upon 30 inches, with the winds northerly, and moderate ; and the year went out with fine weather.

Such were the principal circumstances which met my notice in a depression of the barometer, to which I find no parallel, for London, in the whole Meteorological Annals of the Society. Let us, however, now advert to a case or two which seem to have approached to it. BARKER, of Lyndon, gives the following monthly minima, viz. 1782, April, 28.09 in. ; 1783, February, 28.08 ; and March, 27.88 in. (Philosophical Transactions, Vol. LXXIII., p. 242, and LXXIV.,

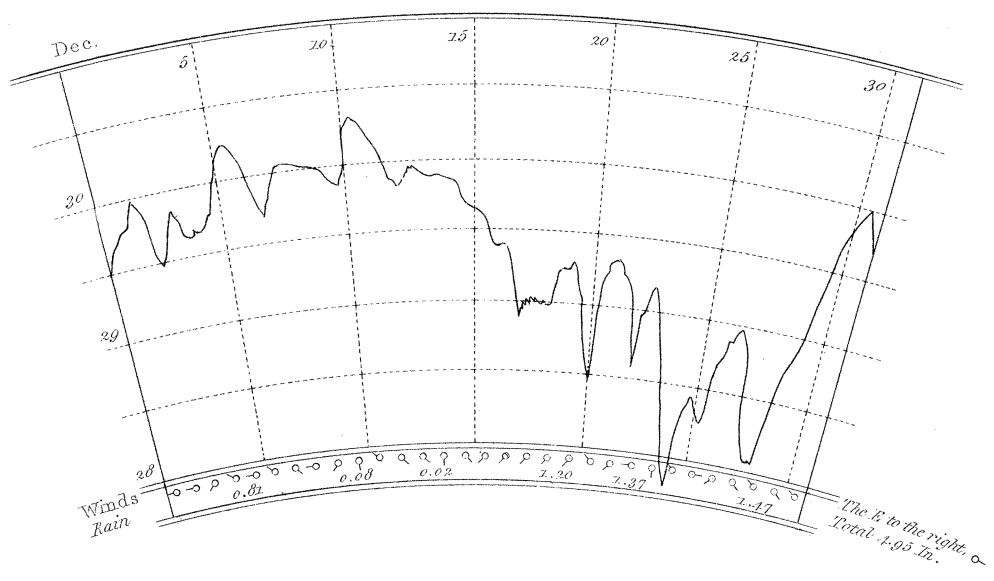
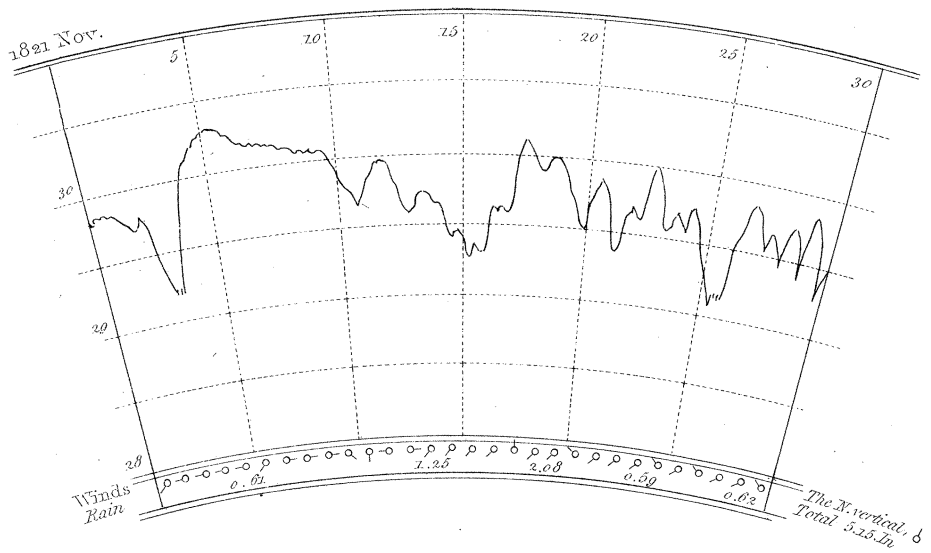
p. 283.) Now, the two latter occurred during the dreadful earthquakes in Calabria, of which we have a record in the Transactions; and I believe the barometer was noted to be extremely low, about that time, in various distant parts of England; but a comparison of the Society's Register is here precluded by a chasm of several years continuance. I have no doubt, however, from the general appearance of the means in the Lyndon Register, that the barometer there stood commonly some tenths lower than that at Somerset house. With respect to my own, I found yesterday, when the quicksilver was but little above 30 in., that my portable barometer exceeded that at Somerset House, when placed by its side, by 0.05 in., which was likewise, as nearly as I could judge, the difference in excess from my clock barometer. The latter therefore agrees very nearly, in this part of the scale at least, with the barometer registered in the Transactions.

I annex to this paper a diagram, traced from the variation on the face of my clock, for the two latter months of 1821, the scale being three quarters to an inch, (Pl. XIII.) placing at bottom the amount of rain in each successive five days, and the winds, so far as may serve to show their succession. It will be seen that this great depression was preceded by abrupt changes, fluctuating for 30 days, chiefly between 29.5 and 30 inches, during a continuance of stormy weather; and that the depression itself was 14 or 15 days in progress, from the point of 30 inches, to that from which it finally rose in three days.

The rain for these two months is 10.10 inches, a quantity without precedent in the same space of time at London: that is to say, without one on record. BARKER gives, however,

for “ April, 1782, 6.125 in. ; and for “ May, 5.722 in.” at Lyndon ; yet the South Lambeth table, given along with his own, exhibits but 6.24 in. for these two months ; and states 6.88 in. for the seventh month (July), following, where he has but 2.70 in. I am almost at a loss for an apology to the Society, for having in my last paper anticipated, on the strength of a single analogy, a *dry* year for 1821, the fact being, that there has fallen at Tottenham, in the whole year, no less than 33.84 inches. It seems as if, with all our anxiety to pass the stream of uncertainty in this science, we must give over making the wooden bridges of conjecture, and wait till we can accumulate more solid materials.

*Tottenham Green,
First Month 10th, 1822.*



*Autographic Curve of the Variations of the Barometer at
Tottenham, in the Months of November, and December, 1821.*