feet; the same distance, found by computing from the Rhuddlan Marsh base, was 82,201·1 feet ; the difference be­ing thus 8·9 feet. From this base several series of triangles were carried in different directions. One series extended to Anglesea, and thence by Snowdown, down the western coast of Wales, joining, near Abcrystwith, a series proceed­ing from the triangles formerly observed in Gloucestershire. A second series proceeded southward from the base, and joined the southern triangles in Glamorganshire. A third series branched out towards the cast, and united with those proceeding westward from the base on Misterton Carr ; and a fourth series was carried from the Rhuddlan Marsh base, through Lancashire, Westmoreland, and Cumberland, into Scotland, and connected with another series extending from the Misterton Carr base, through Yorkshire and Northum­berland, and the east part of Scotland, as far as the north side of the Frith of Forth.

In the different series of triangles now mentioned, the third angle of the triangle was not observed in many in­stances, the peculiar character of the country rendering it impracticable, or at least very difficult, to carry the large theodolite to the station. It is stated in the preface to the volume, that “ with an instrument so excellent as that used in the survey, except for the purpose of intersecting sur­rounding objects, it is perhaps not necessary to adhere te­naciously to the practice of observing the third angle of every triangle.” Notwithstanding this opinion, we think it is much to be regretted that the important verification ob­tained from the observation of the third angle should have been dispensed with on any account whatever ; and in fact the observation of many of those very angles, and a conse­quent recomputation of the sides, have since been found necessary, in order to reconcile the results.

One of the most interesting portions of the volume is the account of the extension of the arc of meridian northward from Clifton to Burleigh Moor, a place situated about three miles north from the town of Gisborough in Yorkshire. In July 1806, the sector was erected at this station, and the zenith distances of several stars observed. The observa­tions were reduced to the first of January 1806, and those formerly made at Dunnose having been reduced to the same epoch, the mean of the whole gave the difference of lati­tude between the parallels of Dunnose and Burleigh Moor = 3° 57' 13''·1. The terrestrial distance between the pa­rallels of the two places was calculated both on the meri­dian of the station at Burleigh Moor and on that of Dunnose, and the mean of the two results was found = 1,442,852∙5 feet. This determination agrees very closely with the for­mer determination of the arc between Dunnose and Clifton ; for it has been stated that, in respect of that arc, the ter­restrial distance was 1.036,337 feet, and the amplitude of the corresponding arc in the heavens = 2° 50’ 23''∙38 ; and assuming the length of the arc to be proportional to its am­plitude (which is not sensibly erroneous for an arc of three or four degrees), the difference of the latitudes of Dunnose and Burleigh Moor will be found by a simple proportion = 3° 57' 18"∙6. But the difference of the latitudes, as de­termined by the sector observations, was 3° 57*'* 13"· 1, and therefore disagreeing only to the extent of half a second, or about fifty feet on the ground. The resulting length of the meridional degree at the mean latitude is 364,943 feet.

Another determination of the length of a meridional de­gree was obtained by erecting the sector at the station of Delamere Forest, in Cheshire, about five miles north of Tarporley. Eight of the stars which had been observed at Dunnose were observed at this station ; and the mean of the observations gave 2° 36' 12"· 2 as the difference in la­titude between the stations on Dunnose and Delamere Forest. The direction of the meridian was likewise ob­served at this station, and the bearing of one side of a tri­angle thereby determined ; which being carried through the series of triangles connecting Delamere Forest with Black Down in Dorsetshire, the distance between the parallels of Dunnose and Delamere Forest was found = 925,188∙5 feet. By carrying on the calculation through the same series of triangles, but with an azimuth deter­mined at a different station, the distance between the paral­lels was obtained = 925,180·7 feet. The mean is 925,184∙6 feet. Now if we seek an arc having the same proportion to the arc between Dunnose and Burleigh Moor which the distance between those stations has to this distance, we shall find 2° 36' 13"∙2 for the amplitude. But the ampli­tude derived from the sector observations is 2° 36' 12''∙2. Hence the difference between the observed and computed amplitude is only 1", which corresponds to an error of 0"∙4 in one degree. The agreement may be considered as sa­tisfactory ; but by reason of the distance of Dunnose from the meridian of Delamere, this determination of the length of the meridional arc cannot be admitted as of equal certainty with that of the meridian of Burleigh Moor, in any deduc­tions relative to the figure of the earth. The result, how­ever, gives 60,823 fathoms, or 364,938 feet, for the length of a meridional degree in latitude 53° 34', or nearly the centre of Englund.

It would far exceed our limits to give a detailed descrip­tion of the immense mass of observations and results con­tained in this volume, and it is beside our purpose to enter into any critical examination of its contents. In a work of such magnitude, and abounding with such a multiplicity of minute details, it will not be expected that errors can be entirely avoided ; and a considerable number, it must be admitted, have found their way into the volume. In some respects, also, the deductions have not been made so as to furnish results possessing all the accuracy possible to be attained by means of the improved science of the present day ; but it is to be observed, that many of the more re­fined methods of calculation have been introduced into the practice of geodesy since the volume was published. The method of assigning weights to the several results, of esti­mating the probable errors, and applying corrections ac­cording to an uniform fixed rule derived from the theory of chances, and thereby avoiding arbitrary adjustments, was then scarcely known. It is due, however, to the present able and enlightened superintendent of the survey to state, that all these less perfect methods of computation and re­duction have long been abandoned, and that every advan­tage which can be derived from the refined theories of Gauss and Bessel has been brought to bear on the work ; and we have little doubt, that when the next account of it shall ap­pear, the scientific skill displayed in the reductions will be found to be quite on a par with the instrumental precision.

The preceding abstract brings down the history of the survey to the end of the year 1809, and we regret that our account must here be brought to a conclusion ; for although the work has continued to be prosecuted with more or less intermission since that time, no further de­tailed account has been given to the public. It may not be without interest, however, to state generally a few particu­lars respecting its subsequent progress.

Since 1809, the prosecution of the survey has been placed under the able direction of Colonel Colby of the Royal Engineers. The triangulation which had been carried to the south-east part of Scotland, as far as the Frith of Forth, was first continued along the east coast to the borders of Ross-shire, and subsequently extended to the Shetland Islands. A series was also carried from the Cumberland triangles, along the western coast, through Dumfriesshire, and to the summit of Ben Lomond, connecting all the re­markable points in Perthshire. In 1817 a base of verifica­tion was measured with the steel chains by Colonel Colby, on Belhelvie Links, near Aberdeen. Shortly after this, the