

THE GENERAL SURVEY OF VICTORIA.

The Report of the Surveyor-General relative to the survey of Victoria has been laid before both Houses of Parliament. It is concise and readable, and adapted to convey a large amount of information to those many "honorable members" to whom the subject is a mystery. The design is systematic. The report begins by stating the objects and requirements of subdivisional surveys, and goes on to allude to the mode of surveying hitherto adopted in the colony, and the vexatious results arising from them.

The arguments adduced in favor of a trigonometrical survey, such as is adopted in old and settled countries, are very satisfactorily answered, and the inexpediency of using the system here, supported by reference to Colonel Dawson's report on Colonial Surveying, published at the instance of Lord John Russell, then Secretary of State for the Colonies, in 1810, also, by an extract from the work of Dr Gillespie, Professor of Engineering in the Union College, U.S. :—

"The great Ordnance Survey," continues the report, "of the United Kingdom, and other great national surveys of old countries, have generally been trigonometrical surveys; but their objects have invariably been to determine the figure of the earth, to obtain accurate knowledge of areas for the adjustment of local burdens, and for forming correct maps of the natural and artificial features of the country as they actually exist, but never as a means to subdivide land for sale."

The progress made during the last few years towards the execution of primary triangulation of the colony, will be of great value in carrying out a geodetic survey, but the difficulties and expense of making that survey complete are great. The stations already complete have averaged a cost of about £500 per station. Since, therefore, neither an unconnected survey like that hitherto adopted here, nor a perfect trigonometrical survey like that of Great Britain and Ireland meet the requirements of the colony, the system of "parallel and meridian" surveying, otherwise known as the geodetic survey, which has been successfully pursued in America, Algeria, &c., is recommended.

The geodetic survey has for its most important aim the dividing of the country into primary squares by main lines corresponding in their position and direction to meridians of longitude and parallels of latitude. Each of the squares average in area about 25,000 acres, while the sides are the tenth part of a degree of latitude and longitude respectively, each side measuring on the average about six miles. Beyond the marking out of these squares the geodetic survey does not extend. These lines being defined, the subdivisional or detail survey within them will be carried on with the theodolite and chain by the usual surveyors, or by contract.

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The report proceeds to enumerate more fully the details of the system, and concludes with the following statement of the progress already made :—

"The geodetic survey was commenced in September, 1858. The first work was the determination of the standard (145th) meridian: this was completed about the middle of October. This meridian was then carried up as far as 37 deg. latitude, and subsequently to the Murray. Afterwards the geographical positions of Mount Macedon, Warrenheep, the intersection of the 37th parallel with the 145th meridian, as well as the 2nd primary meridian (144th), were determined astronomically. In April last, the determination and measurement of the 1st standard parallel was commenced (the secondary one of latitude 37 deg. 43 min. was chosen as most eligible). As this

was a work of great importance, and forms the groundwork of a great portion of the survey, all the care possible was bestowed on it. The measurements, by which the intersections of the ten subsidiary meridians were fixed, were made by a most rigid triangulation along the parallel. The 5th and 6th secondary meridians have been run from the standard parallel over the dividing ranges, and are now being pushed forward to the Murray. The 37th parallel has been run eastwards through Anglesey, and meridians for immediately laying out geodetic blocks are in progress. Some blocks are also being laid out on the 1st standard meridian at the Murray.

"About 350 miles of lines have been run, and from the expenditure incurred it is found that the geodetic lines have cost at the rate of a penny an acre, and will cost much less; at the same time the cost of the detail survey within the blocks will be reduced by that amount."