

hidden a lot of war materials in the cellars of the observatory. After a thorough inspection an electric battery was found in the cellars. However, the absence of instruments of destruction did not allay the suspicions, especially as the story was told at the time the French soldiers were approaching Antanánarivo.

In August, the Madagascan Government sent M. Ramarosoa to make a complete search over the observatory. He found in the north tower six cases with the following inscription on them: "Produits chimiques et photographiques, Brewer Frères, Paris," and at once concluded that this was the ammunition, deciding that the two copper-mounted telescopes were the cannons, and he announced his discovery to the Prime Minister with much pride. The Prime Minister, however, knew that the instruments were really telescopes and not cannons, and expressed the wish to look through one. On seeing how clearly distant objects could be observed, he at once concluded that the instruments were used for watching the manœuvres of the French soldiers. All suspicious instruments and boxes were then taken to the palace; inspectors were frequently sent to the observatory to try and find the hidden war material, but to no effect.

Finally, in September an order was issued from the Queen that the inhabitants of the neighbouring villages were to take the instruments and furniture of the observatory to the college at Ambohipo, and to destroy the observatory, in order that the French, who were advancing on the town, should not find a single shelter. With all possible speed the two men in charge dismounted as many instruments as possible, and packed them ready for transport. The inhabitants, however, were already in the buildings breaking down windows and doors, so that many instruments were broken, and others disappeared. The meteorological observations were continued up to the last moment, and much credit is due to the two assistants, who were indefatigable in their efforts to save as much as possible.

Soon after the destruction of the observatory, of which only a few feet of the walls were left, the French arrived, and an engagement followed between them and the Madagascans; and the position of the latter became so bad that they had to escape to Antanánarivo, leaving behind them their cannons and ammunition, which were afterwards used by the French to bombard the palace.

The next day an inspection was made of the instruments at the college, but most of them were found to have been damaged in transport; so much so, that it was either a case of sending them to France to be mended, or of replacing them by new ones. Most of the other instruments that were taken were returned, and in some cases money was sent to compensate for damages.

The observatory had been at work for a little over six years, and during that time very important observations in meteorology, astronomy, magnetics and geodesy had been made. A subscription is now open for a new observatory and for the College of France at Antanánarivo, and in all probability the new observatory will be dedicated to the memory of the soldiers killed in Madagascar.

TIDES IN THE GULF AND RIVER ST. LAWRENCE.

WE have received a copy of a paper¹ read before the Royal Society of Canada, giving a general description of the results of the tidal observations which are being carried out in the St. Lawrence under the direction of the Canadian Government. In NATURE of April 22, 1897, an account was given as to the origin of this survey and the manner in which the operations were being conducted by Mr. Bell Dawson, the officer in charge of the work, under the direction of the Marine Department of the Dominion. One of the principal objects of the survey is to obtain, by means of self-recording tide-gauges, data for computing trustworthy tide-tables for the use of the navigation.

Tide-tables for two of the stations—Halifax and Quebec—have been issued for the last two years, and for St. John for the present year. Owing to the great variation of the rise and time of the tides at different parts of the Gulf, the pamphlet affords

¹ "Character and Progress of the Tides in the Gulf and River St. Lawrence, as ascertained by Simultaneous Observations with Self-registering Tide-Gauges." By W. Bell Dawson, M.A., Assoc. M. Inst. C.E. (Ottawa: J. Durie and Son. London: Bernard Quaritch, 1897.)

an extremely interesting study of tidal conditions. The regularity with which the tide proceeds to Quebec after it has once entered the mouth of the river is in great contrast with its character while in the Gulf.

The variation in the period of time which the tidal undulation occupies in crossing the open Gulf is twice as great as the variation in the period between Anticosti and Quebec, where the distance is double. The main set of the tide is along the deep-water channel of 100 fathoms, which continues up the river to the mouth of the Saguenay, 130 miles below Quebec. Along the 240 miles from St. Paul Island in Cabot Strait to Anticosti the tide is propagated at the rate of 43 miles an hour; whereas over the 450 miles from Anticosti to Quebec the rate is 82 miles an hour. The variation in the range of the tide at different parts of the Gulf and river is even more varied. At some of the stations and in the Atlantic the range is from 4 to 5 feet. At Magdalen Island, in the middle of the Gulf, and also in parts of Northumberland Strait, the rise is almost imperceptible; while at Quebec and St. John the range is 26 and 32 feet. The wind is also found to have a material effect on the range and time of the tides, which are delayed or advanced from 1½ to 2 hours in some parts of the Gulf, according to its direction and force. The pamphlet is accompanied by a map of the Gulf and several tidal diagrams.

THE DUKE OF DEVONSHIRE ON UNIVERSITY EXTENSION.

A CONFERENCE on University Extension was held in Cambridge last week, and on Thursday, the second day of the proceedings, the Duke of Devonshire presided, and delivered an address, portions of which, taken from the *Times* report, we reproduce:—

LOCAL EXTENSION COLLEGES.

The most important outcome of University extension during the last few years has been the light which it has thrown on the possibility of coordinating, where the circumstances are favourable, various forms of adult education. A few weeks ago his Royal Highness the Prince of Wales opened the new buildings of the University Extension College at Reading, and the presence of a large and distinguished body of representatives of the University of Oxford showed the deep interest taken by the sister University in this new institution, which is the direct result of the University extension movement aided and supported by municipal contributions, local generosity, and the subsidies of the neighbouring County Councils. Special local circumstances and the encouragement given by the Board of Agriculture have given a particular character to the organisation of the Reading College; but the essential fact in its rapid and striking growth has been the part played by the representatives of the University in organising and stimulating local effort and in educating out of various elements a new type of educational institution which associates municipal and local activity with University traditions and prestige. The successful growth of the Exeter University Extension College, which stands in a close relation to the University of Cambridge, and largely owes its increasing educational importance to that connection, is another proof of the value of the services which the Universities are rendering to this branch of national education. The differences in the organisation of the Reading and Exeter Colleges show how wisely the methods of University extension work have been allowed to adapt themselves to the various conditions of distinct localities. The operations of the University syndicates have been happily marked by a judicious sense of the need for elasticity and freedom in educational organisation, coupled with an earnest care for high aims and for a high standing of teaching. A good beginning has also been made, in close connection with the University of Cambridge, at Colchester, where the new University Extension College will, it may be hoped, render excellent educational service to the municipality and surrounding neighbourhood.

A VINDICATION OF THE EXTENSION MOVEMENT.

Apart from providing guidance and stimulus in studies for those who would otherwise be deprived of them, the University Extension colleges and courses have proved of great advantage to many who desire to keep up their intellectual interests and to refresh their knowledge. Teachers in the various grades of schools, public and private, are among those who have had