THE NILE RESERVOIR.

AN official memorandum upon the proposed modifications in the Assuan dam project has been drawn up by Mr. W. E. Garstin, C.M.G., Under-Secretary of State in the Egyptian Ministry of Public Works, and is published in Tuesday's *Times*. It will be remembered that an account of the schemes for the irrigation of Egypt was given in these columns a few months ago (vol. l. p. 80).

Several arguments have been brought against the Assuan cataract as the site for the dam. The first is that this site is not the only possible one to be found north of Wadi Halfa. The second, and, at first sight, the strongest, argument against the proposal is that it is impossible to lay down as an axiom that the Assuan cataract site is the only feasible one for a dam, while the river valley south of Wadi Halfa has been unexplored and unsurveyed.

Mr. Garstin criticises the arguments, and shows that the project proposed best meets the case. In this opinion he is supported by the English and Italian members of the Technical Commission—Sir Benjamin Baker and Signor Torricelli—who reported that there is only one safe site for a dam between Cairo and Wady Halfa, namely, the Assuan cataract. Subjoined is Mr. Garstin's description of the scheme. The careful consideration which has been given to the matter reflects great credit upon the Egyptian Government. Science is to be congratulated upon the action that has been taken; for the benefits that will accrue to it from the investigations which it is proposed to carry out over the whole of Nubia will be of the highest importance.

The Council of Ministers on June 3, 1894, approved in principle of the proposed dam and reservoir at the Assuan cataract, and directed the Ministry of Finance, when preparing the Budget for 1895, to occupy itself with the question of obtaining the funds necessary for the execution of this work.

The project, as then submitted to the Government, consisted of a dam with its crest at R.L. 114·00, which height would have enabled water to be stored in sufficient quantity for the requirements of Middle and Lower Egypt; in other words, for the whole country lying to the north of Assyut.

Most unfortunately the construction of this dam would have necessitated the submersion for some six months every year of the celebrated Philæ temples, as well as of a considerable number of Nubian monuments, which, although less known than those of Philæ, are of great importance to all those interested in the history of ancient Egypt.

The archæological societies of Europe, upon hearing of this proposal, protested against it in the strongest terms, and begged the Egyptian Government to reconsider its decision, and to endeavour to find some alternative scheme by which the country might reap the advantages to be derived from a storage reservoir, without sacrificing the interests of science and archæology.

The Ministry of Public Works, recognising that these protests were founded upon reasons so strong as to command respect, reconsidered the whole matter in detail, and endeavoured to find such modifications of the original scheme as might reconcile the interests of Egypt and of science.

The result of its studies is the modified project which has now been submitted to the Egyptian Government.

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The modified scheme as at present submitted is of the nature of a compromise; it is hoped that it will satisfy the scientific world, while, at the same time, it will further the interests of this country.

It is now proposed to build a dam at Assuan with its crest at R.L. 106·00, or eight metres (26 ft.) lower than that of the original project. This work will of necessity store very much less water than the high-level dam would have done. At the same time a reservoir of this height will supply sufficient water for the wants of either Middle or Lower Egypt separately, although not for their combined areas.

This will mean that the reclamation of the country will proceed more slowly than was at first proposed; and when in course of time the country to the south has been explored a second dam can be made which will store sufficient water for the needs of the rest of Egypt.

This proposal is no new one, but has been fully discussed and estimated for in Mr. Willcocks's report upon the different sites.

The great advantage to be derived from carrying out the work in the above manner is that it will only submerge portions of the Philæ island, while it will leave the rest of the Nubian monuments untouched. A reference to Mr. Somers Clarke's note upon these latter will show that their levels are all well above that of the highest water surface in the modified project as now submitted.

As regards the Philæ temples, the main buildings will be above high-water level altogether. It is true that the South Quay wall, and some of the smaller temples, would be submerged if left unprotected. It will, however, be possible, by the construction of a low water-tight wall, or by other means, to so arrange for their protection that no damage will be done to them by the water.

To a certain extent the artistic beauty of the group will be impaired, but in a land so full of interesting relics as is Egypt, it is unfortunately impossible to carry out any great public work without in some degree interfering with some one or other of these. The only thing to be done is to try and minimise this interference as far as is possible, and in the present case the Ministry of Public Works thinks that it has succeeded in so doing.

As regards the details of the protection works to be carried out upon the Philæ island this Ministry will consult the scientific societies upon every point, and will endeavour, as far as lies in its power, to meet their wishes in the matter.

In order to still further minimise any possible loss to science which might ensue from the construction of the reservoir, it is proposed to carry out an archæological and scientific investigation of the whole of Nubia.

The English societies very rightly impressed the necessity of this work upon the Egyptian Government. The latter, although both willing and anxious to carry it out, found it impossible to do so, owing to the necessary funds not being available. If, however, the reservoir be made this difficulty at once disappears, as the cost of the above investigation will be added to the estimate of the dam itself.

The Public Works Department has been directed to put in hand as much of the work as lies within its scope and power during the ensuing winter season. Topographical surveys will be made and plans prepared; the true bearings of the temples will be fixed and the preliminary plans of all sites completed.

This portion of the work being done, the Egyptian Government will ask the European scientific societies to depute certain of their members to come to Egypt and complete the work.

In this manner it is hoped that a record and a knowledge will be obtained of this most interesting country which will be worthy of the present age, and which should be of the greatest value to the scientific world in the future.

NOTES.

WHERE the good of science is concerned, the Goldsmiths' Company is generally among the leading benefactors. With characteristic generosity, the Company has decided to make a grant of one thousand pounds for the purpose of prosecuting research work in connection with the anti-toxin treatment of diphtheria, and in aid of the manufacture of the serum. At the request of the Company, the Laboratories' Committee of the Royal College of Physicians and Surgeons have undertaken the administration of the grant.

REUTER'S correspondent at Rome reports that at a quarter past six on the morning of Tuesday, November 27, an earthquake occurred at Brescia, in Lombardy. The shock was followed by subterranean rumblings. A similar, though less violent, movement was felt at Bologna at nine minutes past six. Five minutes earlier a sharp disturbance occurred at Vienna, lasting four seconds. It was followed almost immediately by a second slighter shock of two seconds' duration. Shocks were experienced about the same time at Domodossola, Mantua, Pavia, Parma, and Bergamo, while at Rome the seismic instruments gave evidence of disturbance.