THE MAKING OF A MUSEUM.

Mr. L. P. GRATACAP has reprinted, as a separate, his article on Museums which originally appeared in the pages of the *Architectural Record*, and the pamphlet makes an acceptable contribution to museum literature. Many of the points in the making of a museum from the general style of the building to small details of installation are well and concisely treated and frequent diagrams help to a better understanding of the text. On most points the reader will find himself in substantial accord with Mr. Gratacap, but some of the dicta must be regarded as expressions of individual opinion rather than of a general agreement on the points at issue. The personal equation will more or less unconsciously influence the opinions of any one writing on the subject of museums and what would meet with the unqualified approval of an ornithologist might not please an invertebrate paleontologist. If any apology is needed for noting that there are differences of opinion concerning the correctness of some of Mr. Gratacap's views it is to be found in the fact that the growing interest in museums, the large sums of money involved in their construction and maintenance, and the great value, in every sense of the word, of their collections seem to demand a careful consideration of all details of construction and installation.

Light is a question of vital importance to a museum, but Mr. Gratacap tells us nothing of the various methods of electric lighting that have been devised especially for museums and nothing of the Luxfer prismatic glass for throwing light into dark corners. And while the lighting of the building as a whole is considered at some length, the question of the window glass is not touched upon. As a matter of individual opinion the windows of a museum should be of ground glass, unless prismatic glass is required for special places, not only to exclude the direct rays of the sun and thus lessen injury to the specimens, but to diffuse the light; any arrangement of curtains that will keep out the sun will deaden the light also. The alcove system of arrangement is discussed and the statement made that by this method table cases are excluded. What has always seemed an ideal arrangement, and one that was shown to good advantage in the exhibit of the U. S. National Museum at Chicago, and may now be seen in portions of the Field Columbian Museum, is the alcove system with table cases in the center of the alcove; if there is any better plan than this, where there is sufficient overhead light, the writer has yet to see it.

Passing to the cases themselves it may be said that the objection to case doors pushing upwards is not that the glass can not be cleaned, an objection that is purely imaginary, but that it is difficult to make such a case dust tight, a difficulty that may be largely overcome by careful construction; on the other hand the size of the glass that may be used in a counterpoised sash, and the ease of handling may be looked upon as offsetting many disadvantages. It is to be doubted if a case can be built with sashes sliding by one another that will be either dust proof or attractive in appearance. For floor cases the double desk case with upright center, sometimes termed a Liverpool case, is most admirable for the display of minerals, shells, or other invertebrates.

Any disposition of shelves must necessarily be adapted to suit the specimens, but it is frequently, if not usually, found in practice that it is decidedly best to have the broadest shelf near the center of the case and a little below the level of the eye. To place the broadest shelf near the bottom of the case prevents the use of the floor for large and bulky objects. As for glass shelves they are often very desirable since they do transmit a great deal of light while not presenting the heavy appearance that is unavoidable where wood is used. While talking of shelves the omission of any mention of the Jenks brackets is a little strange as these are for many purposes much better than any others.

The best methods of exhibiting fossils may as yet be undiscovered, but some excellent beginnings have been made both in the American Museum of Natural History and in the U. S. National Museum, and among these beginnings many consider the use of encaustic, not terra-cotta, tiles which Mr. Gratacap looks upon with doubt. The color and texture of these tiles are agreeable to the eye, their first cost is small, their color is uniform and they do not fade by exposure to light; also specimens which have

been cemented on may be removed by soaking, the tile cleaned and used again. The arrangement of invertebrate fossils mounted on these tiles in almost vertical series enables the collection to be seen at a glance and to be read with the facility of a printed page.

Above all things it should be borne in mind that no hard and fast rules can be laid down for the display of specimens, but that methods must be modified to suit the subject. The main effort of an exhibition series must be to attract, interest and instruct the public and for this purpose a small number of carefully chosen specimens, well installed and well labelled is to be preferred to a multiplicity of objects which fatigue the eye and by their very number prohibit careful examination. The student will always search for information. One great aim of a museum should be to impart knowledge to the visitor who is not looking for it.

F. A. L.

SCIENTIFIC NOTES AND NEWS.

McGILL University has conferred its LL.D. on Professor Geo. F. Barker, of the University of Pennsylvania, on Captain Alfred T. Mahon, U. S. N., and on Mr. J. F. Whiteaves, of the Canadian Geological Survey.

THE Paris Academy of Sciences has elected Professor van der Waals a corresponding member in the place of Sir George Stokes who was recently made a foreign member.

Dr. W. J. HOLLAND, the director of the Carnegie Museum of Pittsburg, has been requested by the trustees of the Carnegie Institute to devote his entire time to the management of the growing departments of that institution. Director Holland is now the chancellor of the Western University of Pennsylvania and the Carnegie trustees are anxious that he should relinquish that position in order to devote his time to the administrative and scientific work of the Institute.

THE tenth award of the Riberi prize of 20,000 lire ($4000) will be made by the Royal Academy of Medicine of Turin, on December 31, 1901, for the best printed or manuscript work, or the most important discovery, during the five years, 1897–1901, in experimental pathology, hygiene, or forensic medicine.

THE Danish Academy of Sciences has elected to foreign memberships Professors E. van Beneden, of Liège; W. Fleming of Kiel; H. Dohrn, of Naples; Th. Engelmann, of Berlin; R. Helmert, of Potsdam; L. Henry, of Lyons; M. Treub, of Buitenzorg, and H. de Vries, of Amsterdam.

MR. ALFRED L. KROEBER, fellow of Columbia University, has been appointed curator of anthropology in the Museum of the Academy of Sciences of California at San Francisco.

MR. R. H. YAPP has been appointed assistant curator of the Herbarium at Cambridge University.

SIR J. BARRY TUKE, known for his studies in mental disease, is a candidate for the vacancy in the parliamentary representation of the Universities of Edinburgh and St. Andrews, caused by the death of Sir William Priestley.

PROFESSOR A. A. MICHELSON of the University of Chicago, has been appointed commander of the First Ship's Crew, Illinois Naval Militia. He is a graduate of Annapolis and served in the navy for several years.

DR. JAMES M. SAFFORD, for many years professor of biology in Vanderbilt University and State geologist of Tennessee, will retire from active work at the close of the present session. Dr. Safford has done a great deal of field work throughout the State of Tennessee, and is also known as the writer of important scientific articles and a valuable work on the geology of Tennessee.

PROFESSOR KITASATO of Tokyo, has discovered a second bacillus which he considers to be an etiological factor in the production of plague. He has also produced a new plague serum.

PROFESSOR JACOB E. REIGHARD, of the department of zoology in the University of Michigan has established a camp on the Huron River near Geddes and is engaged in studying the habits of the dog fish (*Amia Calva*) in its natural surroundings. These are of special interest owing to the fact that after the eggs have been laid the male guards them and the young fish.

THE Council of the British Institution of Civil Engineers has made the following awards for