rookeries and allow the voyagers to photograph the animals. It may be chronicled that a new and valuable ally to science education has been established in California in the boat with a glass bottom, through which naturalist or layman may observe animals in their habitat and note their habits unconstrained.

EXPLORATIONS IN CRETE

By Edith H. Hall

SINCE the island of Crete passed out of the control of Turkey, now nearly a decade ago, it has offered a field of exploration unparalleled for richness even in Ægean lands, where ancient remains abound. Under the Turkish regime a thorough-going exploration of the island was impossible, but since the flags of the Powers first waved above the Venetian walls at Canea; since the Italian gendarmes came to train the now efficient Cretan police, and since the power to grant permissions to excavate passed into the hands of courteous and enlightened officials, Crete has been the scene of a remarkable series of discoveries.

To the traveler arriving from Greece the island of Crete presents aspects that are exotic and foreign. The heavy Venetian walls, it is true, which greet the eye as one approaches the harbor of Candia differ only in extent and splendid preservation from the Venetian walls at Nauplia or Corfu. But the costumes of the boatmen who row the visitors ashore are Turkish; among the loiterers on the quay are Bedouins and negroes; and the first glance up the narrow, twisting, and roughly paved streets of a Cretan town will discover a Turkish balcony or a minaret and mosque. Even so, in the third and second millenniums B. C., the island must have seemed strange and foreign to a traveler from the north, for in that remote epoch also Crete was in close communication with Phœnicia and Egypt, and absorbed more elements of these civilizations than did the mainland; but of this later.

The archæologist who excavates in Crete enjoys a brilliant background for his work. When he sees for the first time the picturesque Turkish sailboats, with their flame-colored sails, rocking beneath the Venetian mole; or the colors of the market-place, where the venders wash their green stuff in the old fountain; or the fields bright, now with pink and purple anemones, now with yellow oxalis and scarlet poppies, he exclaims, "Why do the artists forever paint Capri and Sorrento and never paint this?" But when he has lived in the island some time, either renting for a trifle a house in Candia with a pebbled court and garden all his own, or living in some country village, where he learns to marvel at the unspoiled refinement and courtesy of the islanders, he is likely to offer a prayer of thanksgiving that Crete is as yet unknown to the tourist throng—that it still remains a rare prize enjoyed by occasional travelers and a handful of archæologists.

It is not an exaggeration to say that one cannot turn the soil of Crete without bringing to light potsherds—relics of the prehistoric, the Greek, the Roman, the Byzantine, or the Venetian civilizations which have flourished successively on Cretan soil. But generally these fragments of pottery are coarse, undecorated, and badly broken, and are separate from house walls. To find good specimens of well-finished decorated pottery, together with the remains of buildings, is the aim of the archæologist, and to find such remains dating from the prehistoric period is today his highest ambition, for scholars bent on solving the problems of early Ægean civiliza-

tion and Roman and even Greek remains comparatively uninteresting. The spirit of Darwin has penetrated even to archæology, and the excavators of the present have a passion for beginnings.

It is against the law in Crete to unearth antiquities without permission from the government, and peasants who by chance come upon ancient remains in working their olive orchards or vineyards are bound to report such discoveries promptly to the officials of the museum at Candia. In this way are occasionally found sites for excavating, but these sites go chiefly to the Greek archæologists. Foreigners must find for themselves their own places to dig. This they do by riding on horseback from village to village and inquiring everywhere if antiquities are found there. In response to this appeal the peasants produce all sorts of objects, from Mycenæan seal-stones of the second millennium B. C. to tops of modern beer bottles. The visitor next goes with the peasant to the place where the seal-stone, or whatever it may be, is found, and if he is lucky his first trial trench will discover an ancient house wall, and he will know that he is on the right trail, and will apply to the Cretan government for permission to conduct systematic excavations.

Such is the method used today. Ten years ago, when the island was first opened to scholars, the most promising sites, like that of the Knossos palace, were already known from the reports of peasants and the notices of travelers; and the archæologists who were so fortunate as to get these sites for digging, and whose operations in the island have lasted until now, generally have other possible sites for excavations in reserve about which they are often willing to tell to newcomers.

The number of men employed in excavations varies according to the size of the site and the funds at the disposal of the excavator, from ten to a hundred or more men. The majority of these are "basket boys," whose work it is to carry to the dump heaps the earth which is removed. Their wage is about twenty cents a day.

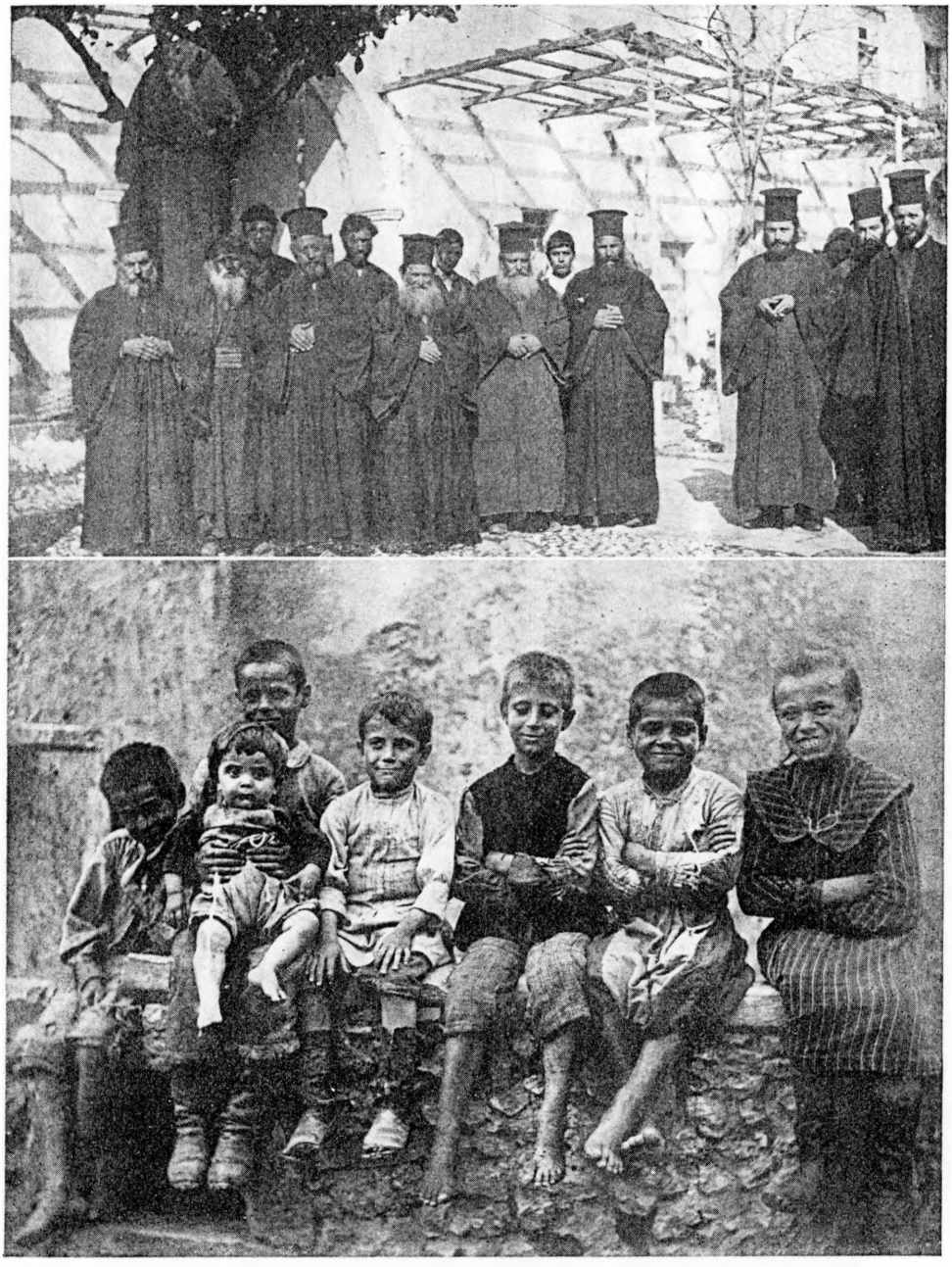
The most intelligent workmen are employed in loosening the earth with picks. They must be trained to watch with care for every scrap of pottery, bronze, or stone in the earth before them, and instantly, when they see that they are approaching a floor level on which vases rest, to stop using the pick and to work with a knife which every good workman keeps ready hanging from the top of his boot. Such workmen earn forty cents a day. Behind them are stationed the shovelers, who put the loosened earth into baskets, watching the meanwhile lest any small object be thrown away. Their wage is thirty cents.

Lastly, mention must be made of the men, or sometimes girls, who wash the pottery and pottery fragments. In some kinds of soil potsherds become incrusted with a hard formation which yields only to an acid solution. To counteract the effects of the acid, an alkali bath is necessary, and then a rinsing in clear water. During this treatment each vase or group of sherds must be kept quite distinct from its neighbors, for one of the fundamental principles of excavating is to keep an exact record of the contents of every room or given area and of the different strata within that area. This care is the result of the new scientific method of archæology which has grown up in the last thirty-five years. Excavators now dig not for spoils—as did the nephews of the popes in the fifteenth century, out of the desire to fill their villas and gardens—but for science solely. The objects found go, with a few exceptions, to the Candia Museum; only the "useless objects," so the law reads, may be exported.

To describe in brief compass the results of the last ten years of digging in Cretan soil is impossible. It would be necessary to take into account the work of Doctor Evans, of Oxford, in unearthing the palace of Knossos; of the Italian mission at Phaestos and other points in southern Crete; of the Greek scholar,

A CRETAN ROAD

CRETAN WOMEN SPINNING

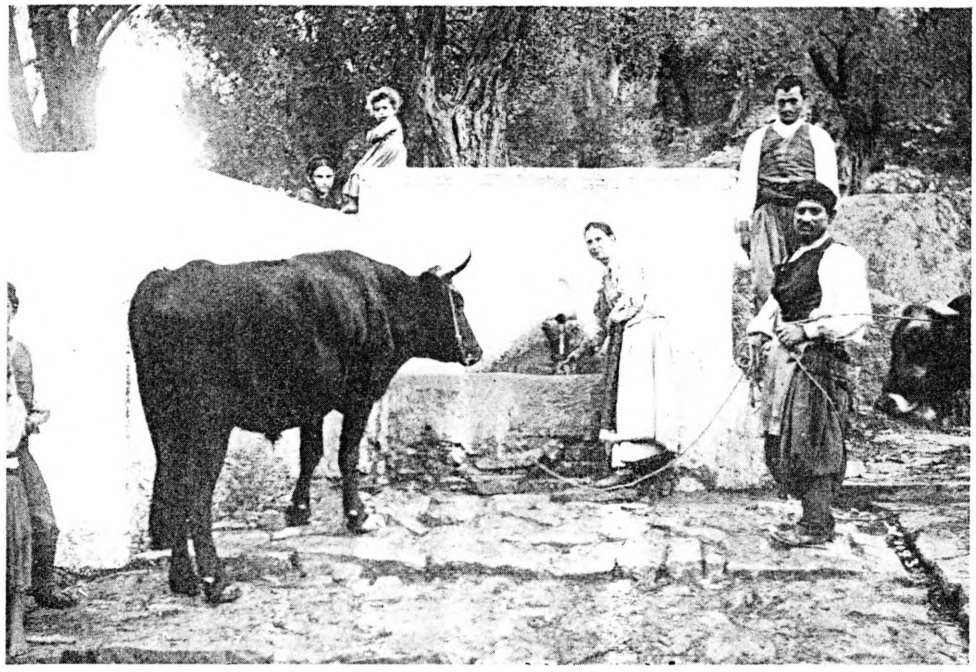


MONKS OF GOMA MONASTERY, WHERE TRAVELERS ARE GLADLY ENTERTAINED

CRETAN CHILDREN

LARGE JAR AS HIGH AS A MAN, FROM THE KNOSSOS PALACE
This is now thought to be the kind of "tub" in which Diogenes lived

CRETAN BOY PEDDLING COOKIES



SCENE AT CRETAN FOUNTAIN

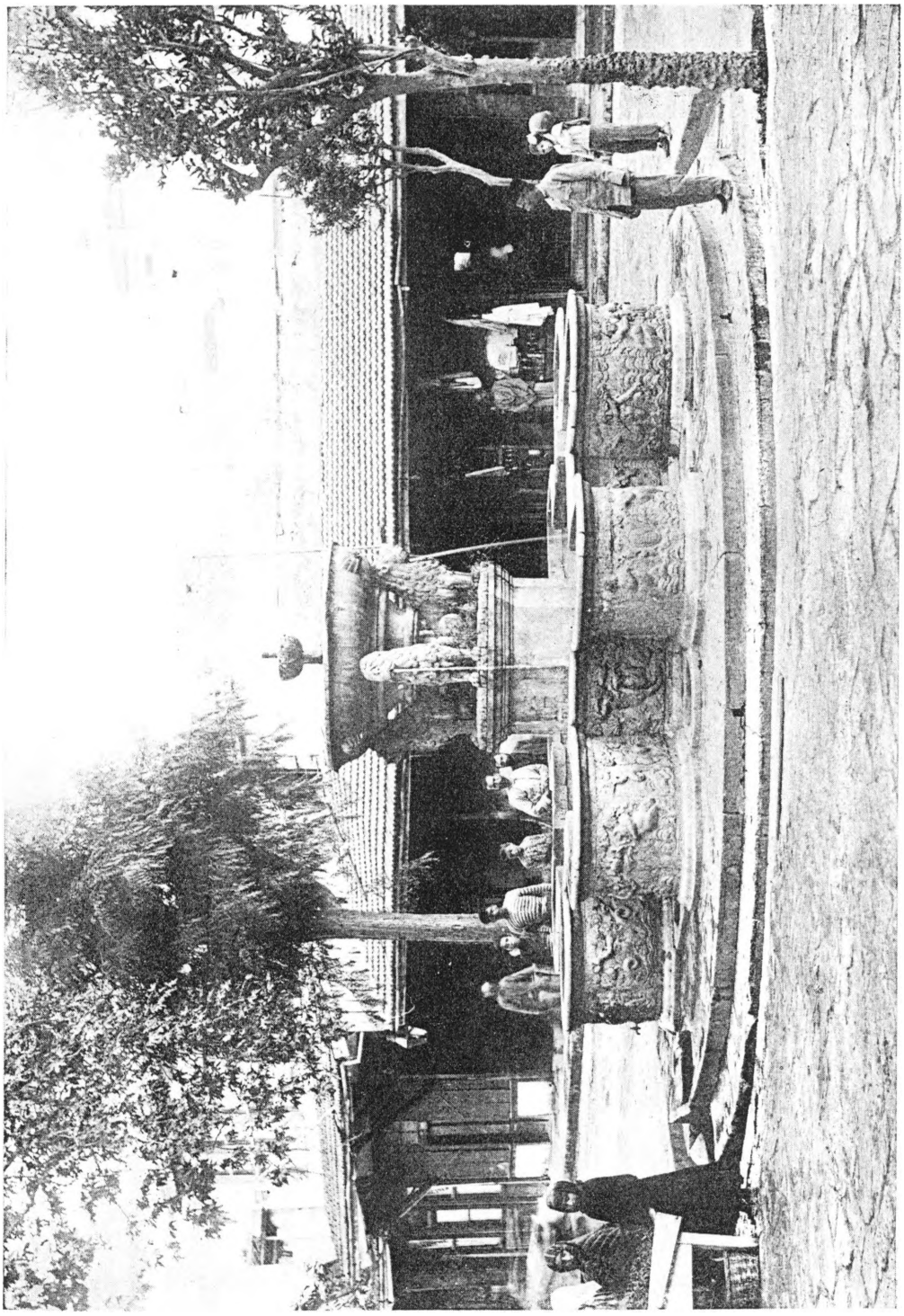
RED STONE LAMP FROM PSEIRA 1500 B. C.

OPENING CLAY SARCOPHAGUS OF 1400 B. C., CONTAINING SKULLS AND BONES

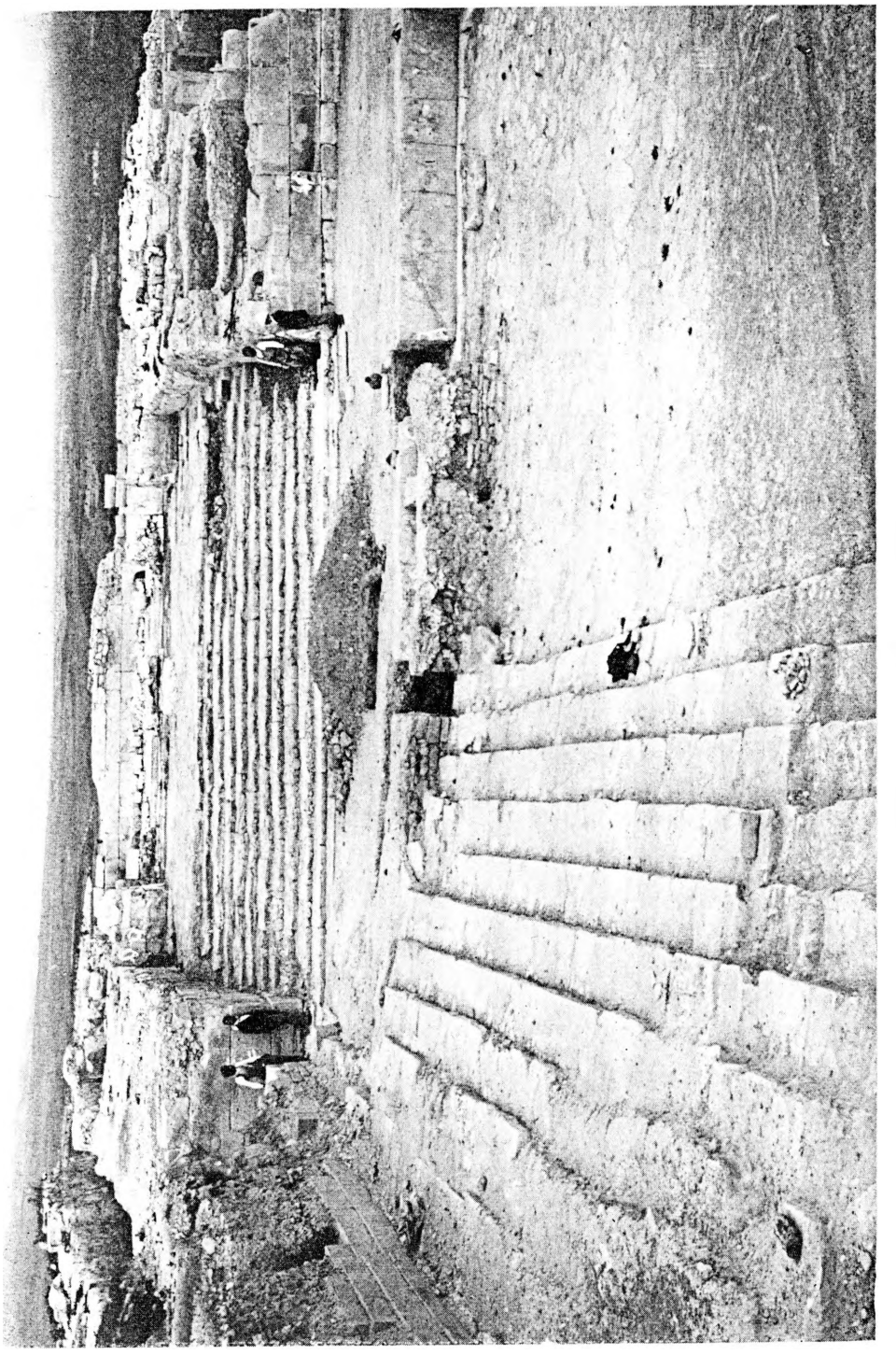
GREEK FOREMAN, ARISTIDES, MENDING A VASE

REMOVING THE LAST EARTH FROM ABOUT A VASE

CRETAN GIRLS WHO WASH THE POTTERY



VENETIAN FOUNTAIN IN THE SQUARE OF CANDIA, CRETE



STAIRS IN PHAESTOS PALACE

Mr Xanthondides, at Koremasa and other sites; of the English scholars from the British school at Athens, at Zakro, and Palaikastro, and lastly of the American excavators, Mrs Harriet B. Hawes and Mr R. B. Seager, the former at Gournia, the latter at Pseira and Mochlos. Between them they have excavated palaces, towns, and cemeteries. The palace of Knossos alone "is a more complex and extensive series of courts, rooms, and labyrinthine passages than has been met with anywhere on Greek soil."

Further, the recent investigations in Crete have evolved a system of chronology for this prehistoric era of 3500-1200 B. C.; they have shown that a high degree of artistic skill in decorative art and modeling had been attained in that remote epoch; that a system of writing was in use; that out of the hardest stones graceful vases were cut; that jewelry no less beautiful than that of the Alexandrine period was made; that boats plied frequently to and from Egypt, exporting and importing wares; that men lived in houses two and three stories high, equipped with baths and drains, and well-lighted rooms opening into sunny courts and commanding pleasant views.

The results of these explorations are adding a new chapter to history, or rather they are turning legend to history, for those who read the reports of the Cretan excavators, especially those of Doctor Evans, will not find themselves involved in the dry and dusty discussions of an antiquarian, but, as a writer in Crete has recently said, they will be carried back to the "glamour and romance of first fairy stories" about the Minotaur and the Labyrinth.

No better impression of the dramatic quality and thrill of Cretan discoveries can be given than by the following quotation. Doctor Evans has just discovered the fresco of the Cupbearer in the Knossos Palace, and writes in his first report:

A CRETAN MOUNTAINEER

"The colors were almost as brilliant as when laid down over three thousand years before. For the first time the true portraiture of a man of this mysterious Mycenæan race rises before us. There was something impressive in this vision of brilliant youth and of male beauty recalled after so long an interval to our upper air from what had been till yesterday a forgotten world. Even our untutored Cretan workmen felt the spell and fascination. They, indeed, regarded the discovery of such a painting in the bosom of the earth as nothing less than miraculous, and saw in it the 'icon' of a saint!"