

the dimensions, as well as the proportions, of the parts represented. The different shapes adopted for shafts of marine engines and their accessories, cranks and rods, eccentrics and cams; toothed gearing of all usual kinds; stuffing boxes and joints; valves and cocks and pumps, and other minor parts, are all well-described and finely illustrated before the construction of engines and boilers is studied in larger plans.

Drawings and descriptive text exhibit the forms and proportions of the modern marine boiler and of all its appurtenances; while in this connection, the fuels and their composition, the properties of steam, and the economics of steam-making, are presented in a simple manner. Similar methods are adopted in the treatment of the marine engine, and the most recent types are fully described.

No attempt is made to give the mathematical principles involved in construction, or to teach the art of designing and proportioning the engine, the boiler, and their accessories. The book has little value to the engineer; but, as an introduction to the serious study of the steam-engine for marine purposes, it is admirable. The authors and publishers have done their work well, and we have rarely seen a finer piece of technical book-making. Paper, press-work, and binding are good, and its illustrations among the very best that we have ever seen in this department of literature.

NOTES AND NEWS.

MR. HENRY C. MERCER, the newly appointed Curator of American and Prehistoric Archaeology at the Museum of the University, delivered an address on "The Human and Animal Remains in the Lookout and Nickajack Caves at Chattanooga, Tenn.," before the Numismatic and Antiquarian Society of Philadelphia, on the evening of Jan. 4. Mr. Mercer referred to the importance of

cave explorations in European archæology, and stated that the one fact that we gather is that early man dwelt in caves. Little cave hunting has been done in this country, chiefly because American archæologists have gone wild over "relics," and mounds and cliff dwellings had diverted attention from other explorations. The speaker reviewed the work done in examining caves in this country, such as the investigations made by Professor Rogers at Durham Cave and Haldeman at Chikies, as well as the Port Kennedy "bone hole" explored by Professor Cope. A great scantiness of animal remains as compared with similar caves in Europe characterizes American caves, and this is accounted for by the difference in the conditions. The Lookout Cave at Chattanooga he regarded as typical. The floor of the cave, like that of many of the other caves in its vicinity, had been disturbed during the War of the Rebellion by workmen engaged in digging nitrous earth for the manufacture of gunpowder. He talked with the men who had been engaged in this work, and learned from them the portion of the floor which they had not disturbed. The bottom of the cave contained a mass of human and animal refuse. The floor was divided into sections by the explorer, and each fragment of bone, pottery, or stone was marked with the number of the section, and a number indicating the depth; so that things found in the first foot of digging were marked "one"; in the second, "two," etc. This work was carried down a depth of about four feet to the bottom of the animal deposits, and the contents appeared entirely homogeneous. The remains were Indian throughout, and decorated pottery was found in the lowest part. No indication of palæolithic man, nor of pygmies, nor of any one except the familiar Indian was discovered. The bones and shells have been identified by Prof. E. D. Cope, and reveal the following fauna: Deer, opossum, lynx, squirrel, rabbit, bat, peccary, raccoon, marmot, water tortoise, soft-shelled tortoise, sucker, garfish, spadefoot

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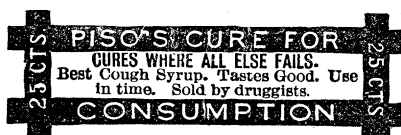
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