Ancient Egyptian Materials and Technology

Edited by

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1. Introduction

PAUL T. NICHOLSON AND IAN SHAW

During the last two decades the nature of Egyptology has gradually changed, and new technological and socio-economic questions are now being asked of the archaeological data. With this change has come a renewed interest in many aspects of Egyptian materials and technology. So great has this interest become that it is no longer possible for the traditional Egyptologist alone to tackle such questions as the composition of materials, provenance and the means by which different types of artefacts were produced. Many new analytical techniques have been developed and applied and the results are now available, providing a great deal more precision than was previously imaginable.

These new approaches currently being adopted in Egyptology are reflected in the structure of this book. Each chapter has been written by one or more specialists, drawing not only on conventional Egyptological skills but also on expertise in the natural sciences as applied to archaeological data. All the contributors are either involved in recent field projects in Egypt (not least the important Egypt Exploration Society excavations at Amarna and Memphis), or at the forefront of laboratory-based analysis of archaeological materials.

It will be obvious to many readers that this volume has been inspired by Alfred Lucas's classic work *Ancient Egyptian Materials and Industries*, which has long served Egyptologists as a standard work of reference. First published in 1926, Lucas's book has been revised several times, most recently in 1962, when it was updated, primarily in terms of its bibliographic references, by J.R. Harris (see Lucas 1926, 1934, 1948, 1962). Even the fourth edition still primarily reflects the analytical work of a single individual employing the necessarily limited equipment available in the 1920s (see Brunton 1947 and Gilberg 1997 for assessments of the life and work of Alfred Lucas). Despite the importance of Lucas's work, it has long been recognised that a more modern multi-disciplinary treatment is required, giving not only the result of analyses and technological investigations but also explicitly stating the means by which they were obtained.

While this current volume will not 'replace' Lucas's work, and is not intended as a revised edition of it, it is hoped that it will provide a free-standing source of reference on its subject. Thanks to modern analytical techniques, some chapters will almost entirely supersede those provided by Lucas, while others will provide updated approaches concentrating on new data and new questions. The study of ancient Egyptian material and technology is a vibrant one, with research being conducted by many scholars all over the world (a situation reflected in the diverse list of contributors here). This is quite unlike the situation in the 1920s and 1930s, when most Egyptologists were interested in linguistic and architectural questions, and Lucas was one of a relatively small group of scholars concerned with the analysis of artefacts. As a result of the new vigour of the subject, this volume will perhaps not enjoy the very long currency of Lucas's work but will, we hope, provide a solid basis for future work.

Here we are fundamentally concerned with the study of the procurement and processing of the raw materials employed by the ancient Egyptians. The book is not meant to be an art historical typology of objects produced in any given material, nor a text book on the scientific analysis of such materials. Each chapter is intended to provide an overview of the current state of research on the material in question. In some cases, this is not possible, either because modern research on certain materials (e.g. leather, meat, basketry) has only just begun or because the quantity of data has become so great in recent years that the most meaningful approaches tend to be those that focus on particular problems (as in the case of the chapters on pottery, stone and mummies).

The basic structure and coverage of the book were finalised at a seminar involving most of the contributors in 1994, when it was agreed that chapters on food technology should be included, as these represent a fruitful area of research that has almost entirely emerged in the years since Lucas's time. The contributors have made every effort to provide explicit information on the scientific analyses conducted, since the lack of such detail has been an increasing problem in judging the value of some of Lucas's conclusions. It was also agreed that some indication of the workings and limitations of relevant analytical techniques

was necessary so that non-specialists would be better able to judge the results of earlier and current research.

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