

Fig.1

# Ancient Egyptian Woodworking

by Art Burrows

All that is known about woodworking in ancient Egypt has been derived from three sources — the tools themselves (or models' of them), the artifacts which were obviously made with them and the decorations (mainly reliefs and paintings) which depict their use. Most of the information from these sources has come from the tombs of nobles who were in some way connected with the craft or building construction aspects of daily life.

While it sometimes appears that we know a great deal, there is, in fact, a lot more uncertainty than the glib statements made by some commentators, may suggest.

Before accepting any of the information we have at face value, it is important to get a few things straight. The first is that the Egyptian civilisation lasted for almost 3000 years, from about 2575BCE<sup>2</sup> (the start of the 4th Dynasty — and the beginning of the age of the great pyramids) to the Ptolemaic Period (about 300BCE to 200CE).

During this time, the nation's size, cohesion and power varied widely. Statements about the habits, pursuits or commonly used artifacts of the Ancient Egyptians therefore beg the question of just which period is being referred to in

their long history. In this connection, it should be added that it is often difficult, even impossible, to establish an accurate relationship between an artifact and the period from whence it came. The reason for this is explained in the following article — *Woodworking in the Cairo Museum*.

The second problem lies in determining just what it is we are looking at when we try to interpret the paintings and reliefs on tomb walls. We've no idea how accurate these representations are. We know that the people could not all have been as young, attractive and healthy as they are shown. So what licence was taken with the rest of the subject matter?

Thirdly, we have many examples of tools with solid wooden handles, but what if there were tools with handles made from more perishable materials? Would we recognise the more durable parts that may have survived?

And, finally, can we be sure that we have not overlooked some important tool simply because it has no modern counterpart?

## The Wood

One thing of which we can be certain is that wood was scarce throughout the whole period of Ancient Egyptian civil-

isation. Aside from *Acacia nilotica* and one or two palms from the delta region, there was a dearth of locally available species for construction and furniture making. Practically all of the wood used in Egypt had to be imported, mostly from countries in the Western Mediterranean.

Geoffrey Killen<sup>3</sup> has published a list of woods that are either known to have been, or could have been used: Ash, Birch, Boxwood, Cedar, Carobwood, Cypress, Date Palm, Dom Palm, Ebony Elm, Fig, Fir, Hornbeam, Juniper, Linden, Maple, Oak, Persea, Pine, Plane, Plum, Poplar, Sidder, Sycamore Fig, Tamarisk, Yew and Willow.

Cedar was among the most commonly used, mostly Cedar *libani* (from the Lebanon), though Killen also suggests *C. atlantica* and *C. deodara*.

The Solar Barque mentioned in the last Issue was made principally from Cedar, as was the well-known throne-like chair which was found in the tomb of King Tutankhamen. It is significant that over 2000 years separates these two for it indicates a trading partnership that far outlived any in the more recent history of the world.

## Saws

The saws used by Ancient Egyptians do not appear to have differed much in design over an extraordinarily long period. Photo.1 shows two of the many saws contained in the Cairo Museum collection; the blades, around 300mm-350mm long, are fitted into contoured handles. As usual, there is nothing to show where the saws came from or how old they are.

While the physical design of Egyptian saws may have stayed much the same, the metals from which they were made certainly changed.

In most texts, you will find comments to the effect that the earliest saws, believed to be in use about 4500 years ago when the largest of the pyramids were being built at Giza, were made from copper.



Photo.1

Photo.2



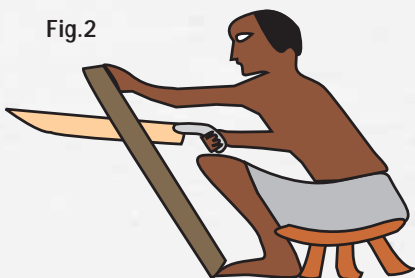
But it was not the relatively pure copper with which we are now familiar. Using only open fires, it was impossible to achieve temperatures high enough to do more than limited refining of the mined ore. This meant the inclusion of many impurities in the copper used and, indeed, in virtually all of the other metals employed throughout the period of this civilisation.

It is often said that these impurities in copper — and later in the constituents of bronze — led to the metals being harder than we would expect, given our experience with the far more pure metals available today. While this assumption appears reasonable, there's not much hard evidence since museum curators rarely allow destructive metallurgical analysis of their precious collections.

The physical construction of the sawblades is somewhat easier to assess. Killen and others have shown they were fabricated by forging and hammering — a process which would have work-hardened the metal — 'drawing' the material back from the long edges to form a ridge along the centre; this ridge was then extended into a tang for the handle.

The teeth were roughly punched out

Fig.2



and it seems certain that it is this punching that is responsible for the teeth having a 'set' to one side. The notion of alternately setting the teeth to one side or the other was apparently unknown, nor would this modern method of achieving a kerf wider than the blade thickness have been of any real benefit.

The central ridge was far thicker than any set on the teeth could have achieved and therefore made the wedging of the kerf mandatory, particularly when rip sawing. (Some tomb paintings show the use of such wedges.)

It is impossible to tell from the examples in Photo.1, but others (which I could not unfortunately photograph) show that the Egyptians used pull saws. Killen asserts that the use of pull saws began in the 1st Dynasty and lasted until the Romans introduced the push saw. In this connection, however, he makes a curious remark: '*...it must have still been difficult to cut accurately with pull saws. Pulling the saw through timber, even well seasoned wood, must have created problems...*'

Chinese, Korean and Japanese craftspeople would surely disagree. So would many of their Western counterparts to whom the Japanese pull saw has become the tool of choice when high standards of accuracy are required.

Cross-cutting cedar or even some of the harder woods used, would not have presented much of a problem for copper or, later, bronze saws. Most of this type of work (as well as making joints, for example) appears to have been done while the craftsman either sat on the ground, or more likely — given the number of times this is shown in paintings — on a three legged stool. This is illustrated in Fig.2<sup>4</sup> which shows an artisan holding a short length of wood which he is presumably rip sawing.

Other illustrations of rip sawing, (eg. Figs.1&3), show that the artisan normally stood and that the wood being sawn was lashed to a stump or pole, one end of which was buried in the workshop floor. This appears to be as close as the Ancient Egyptians came to the sloping beam used by Oriental woodworkers or the Western workbench.

The method would have been convenient, given that most of the logs that reached Egyptian craftspeople were around two metres long.

The Solar Barque is evidence that longer lengths could be obtained but perhaps only the Pharaoh could afford them. Practically every depiction of rip sawing logs shows the same general arrangement and in every case, the logs are no longer than about two metres.

Rip sawing is among the crafts demonstrated (Photo.2) at the Pharaonic Village

— which is probably best described as an Ancient Egyptian theme park — in Cairo. The performer, dressed in appropriate garb, gives the saw a few thrusts as the tourists chug down a canal, sitting on a raft drawn by a tiny tugboat.

There is little doubt that woodworkers used copper and bronze saws, but we must wonder whether these might sometimes have been augmented by more powerful tools. The latter, referred to briefly in the article on the Solar Barque, will be considered again in a future discussion on lathes and turning.

W

**Notes:**

<sup>1</sup> While Pharaohs sometimes counted real items (boats, furniture, chariots) among their funerary equipment, even they relied upon a vast number of models to somehow magically satisfy their requirements in the afterworld. Sometimes model tools were included in the tombs of those to whom these may have been important in life.

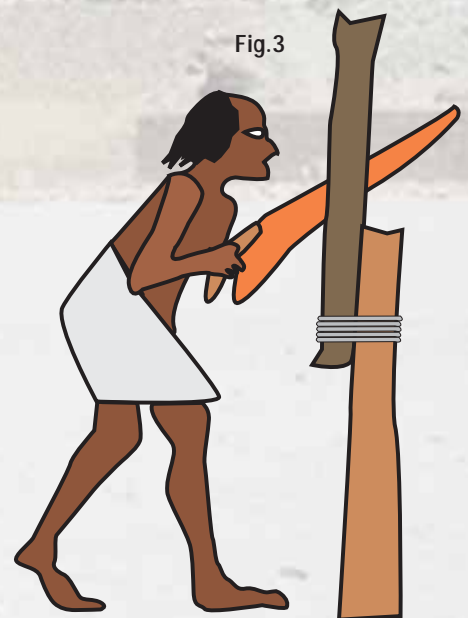
<sup>2</sup> There is growing use of CE (Common Era) to replace AD (Anno Domini — in the year of the Lord) and BCE (Before Common Era) to replace BC (Before Christ).

<sup>3</sup> *Ancient Egyptian Furniture* Vols.1&2 by Geoffrey Killen (Aris & Phillips). Killen also wrote *Egyptian Woodworking and Furniture* (Shire Press).

<sup>4</sup> The Figures which have been re-drawn from paintings in tombs such as that of *Rekh-mi-re* (a governor of Thebes during the 18th Dynasty), have been enhanced for reproduction, but the essential features have been retained.

**Next Issue: The Adze — arguably the most powerful tool in the Ancient Egyptian woodworker's toolbox.**

Fig.3





It is not all that long ago that archaeology was little more than a treasure hunt. With few (but notable) exceptions, those engaged in digging up the past cared less about where an artifact came from, its precise age or archaeological relevance, than they did about how much it might be worth. To this day, the extraordinary wealth of Ancient Egypt, coupled with the propensity of its citizens to bury items of value together with their dead, provides a geographical breadth and density of hidden treasure that is unequalled anywhere else in the world.

Fortunately, most (though not all!) of the ancient items discovered today are carefully catalogued, but only a few decades ago, items found their way into even the best museum collections in the world without the slightest attempt to establish, let alone record, their provenance.

Since the Cairo Museum is over 100 years old and many, perhaps most, of the archeological artifacts which it contains were added to the collection many decades ago, it is not surprising that most of the smaller items are accompanied by little or no information. Yet, once the visitor gets past the ooh and aah stage of appreciating the display, the lack of relevant data becomes uncomfortable.

The magnitude of the problem can be seen from the photo on the right.

The builder's twine and several of the chisels, look no different than those which might be picked up on a modern construction site. Yet, nothing here is less than 2000 years old. Determining exactly where existing artifacts should be placed in history so that their relevance to other artifacts can be firmly established, is a massive task for today's scholars. W

