

Reviews

The Art of the Engineer

Ken Baynes and Francis Pugh
Welsh Arts Council, 1978.

It is largely within the last 10 or 15 years that we have seen the growth of examined project work in schools and colleges, where adolescents are expected to create original designs, predictive of innovative engineering ability, out of minimal (often negligible) technical experience. But the engineers who made Britain the workshop of the world were not trained like this: Brunel may have designed three great ships, each one the biggest thing afloat at the time, but before commencing his drawings he had seen and examined other ships, themselves created after many centuries of unselfconscious evolution, and his designs were the conscious result of consolidated experience learned from the efforts of earlier designers.

Now that the history of technology is again being seriously taught, any opportunity to examine at first-hand the design methods of demonstrably successful engineers of the past is something too important to miss. The Welsh Arts Council, an unexpected source (and for this reason a confirmation of growth in history of technology as a serious study), has recently mounted a touring exhibition and published a pack containing the best of the exhibited material.

This pack, consisting of a 30-page A4 booklet and 12 A2 sheets, was prepared by the Welsh Arts Council for an exhibition of 400 engineering drawings designed to illustrate 200 years in the development of technical drawing. In fact 400 years would be more accurate, since ship drawings from the late 16th century exist, appropriately, in the Pepys Library in Cambridge, although the earliest dated plans from this source date from around 1670.

As a learning resource for technology appreciation by the non-technical majority, this pack is powerful stuff. With the evident concern of adolescents for social and moral issues, shown by 20 years of drift away from sciences and other technical disciplines in schools and in Higher Education, education of the consequent non-technical majority of the population in the fundamental disciplines of the technologies that this nation has lived by since the 18th century has become more urgent.

The appeal of history of technology as a study for any purpose from sheer enjoyment to scholarly research is now well established, but although nearly every teacher has an industrial museum within range of a day excursion, not everyone has yet collected enough material for classroom resource-based learning. Here, in this pack, is the core of a future collection.

The pure visual appeal of the early technical drawings here published should convert anyone to Technical Studies — or to social history: the technical competence of the ship drawings of 1680 is truly impressive, as is the solid geometry of ship design in 1768. It was around 1780 that James Watt,

a trained craftsman and University educated, began to standardise drawing techniques and conventions; Watt's methods, compounded with those of Marc Brunel, clearly influenced Maudslay's drawing-office circa 1818, although Stephenson's engine drawings of c.1824 remained relatively primitive.

By the 1840s plans, elevations and sections were fully developed with standardised colour-codes for different materials; from this period there are drawings for locomotives and steamships. The detail drawings from the Derby railway works in the 1880s are possibly the ultimate in technical artwork for within 20 years came Herbert Austin's sketches for the famous Austin Seven, early aircraft designs, and the beginning of technical illustration, and of cosmetic design to cover technical cheapness.

There is much more in the pack (including specimens of computer drawings) and such an abundance of superb detail that no review can convey all its delights: any single drawing could be the foundation for a lesson in techniques, design method, or social history — in fact all the fundamentals of design education.

Michael Sayer

Victorian Crafts Revived

Anne Hulbert
London: Batsford, 1978, £4.95.

'The Victorian era, being a period of great sentiment and romance, was very much associated with the pressing of flowers'. Reades of *Little Dorrit*, please note. That is the tone throughout Mrs. Hulbert's book which, with many a pause for gasps of delighted admiration of her own achievements, describes how to make oh-so-pretty imitations of what she takes to be the characteristic art-products of a cottage industry carried on by the quaint old charmers whom she calls 'our genteel Victorian ancestors'. Those whose Victorian ancestresses were doctors' wives with a dispensary to look after or ran a school or even (dare one mention it?), kept a house going and brought up a family without a servant, and who have preserved a family memory of much hard work and little leisure, may be suspicious of objects whose only virtue was to keep idle hands from yet worse mischief than the manufacture of the irretrievably trivial. Pressing flowers is a harmless occupation in itself, and children have always enjoyed making pretty ephemera which, when they have collected their share of dust, can with relief be thrown on the fire. (Most of the objects illustrated in this book are obviously first-class dust-collectors: no wonder Voysey didn't like trousers with turn-ups.) To put such things under a literal or figurative glass dome is another matter: one piece of which Mrs. Hulbert must be especially proud (for she shows it full-page twice over) is called a collage of flowers and music and consists of the first page of

a piece of saccharine salon music cut into an arch shape, edged with lace and surrounded with dried flowers which here and there coyly invade the music – all framed in brown velvet with a blue bow at the top. To those who like that sort of thing that is the sort of thing they like; but to serve it up now as an evocation of the spirit of the 19th century is an insult to our Victorian ancestors, and to invite others to follow Mrs. Hulbert's lead in making a trade of such gruesome concoctions is equally insulting to ourselves.

Keep nothing in your house that you do not either know to be useful or believe to be beautiful. If 'crafts' are worth 'reviving', it is not in order to clutter the house with knick-knacks but to engage people in making into things of beauty things they actually need, and to give their hands the physical knowledge of what real materials – wood, clay, metal – are and can do. This is a far cry from constructing 'flowers' out of sea-shells, feathers or bits of cloth or imitating the idle genteel whose habit we are assured it was (the Victorians were 'such a romantic generation of peoples') to devise Valentines in the form of a pair of hands holding a heart adorned with 'suitably sentimental words'. Queen Victoria apparently made a 'seaweed album' and gave it to the Queen of Portugal – a 'book' with scallop-shell covers and pages of tissue paper pressed with dried seaweed. Mrs. Hulbert makes these too and calls one of her own 'exquisite'. I can believe that working at preposterous trifles of this kind may be therapeutic (Mrs. Hulbert is a qualified occupational therapist), though whether the 'resident men' in Her Majesty's prisons (whom Mrs. Hulbert also instructs) wouldn't prefer to try their hands at a 'dear little beadwork purse' is open to question. Of course there are some slightly more serious things mentioned; the section on 'decorating with paint' has some simple but usable suggestions for painting on enamel (which is mistakenly identified with japanning, an altogether different process) – though there is nothing specially Victorian about either the craft itself or the designs illustrated. Children might enjoy some of the less obviously useless beadwork, and it is noteworthy that the children's work illustrated suggests a relaxed, unselfconscious interest in the mechanics of the job which is worth encouraging – so long as there is no implication that as such the practice has any connexion whatever with art. And if there are people who have old frames which they *must* fill ('time spent searching through junk shops for old frames is never wasted' – doesn't it depend a little on whether you have anything else to do?) – then Mrs. Hulbert does offer some elementary, though not always clearly ordered, instructions which might alas start the beginner off. He will then, as the blurb ingeniously observes, find that he can make 'his own Victorian antiques at the same time genuine and modern'.

Andor Gomme

A Potter's Mexico

Irwin and Emily Whitaker
New Mexico: University Press, 1978, \$17.50.

This book was researched between 1971 and 1976 but started, we are told, as a light-hearted venture to give focus to a honeymoon. The team of husband (potter and teacher) and wife (social historian with fluent Spanish) seems to have been admirably equipped to win the confidence of peasant potters and the result of their field-work is the first substantial survey of contemporary Mexican pottery making. The enterprise was timely for there is every likelihood that traditional techniques dating back to pre-Hispanic times will quickly disappear with the increasing impact of industrialism. Ensuring that a living tradition survives by making sensible compromises with modern technology is one of the author's main themes. Today many types of splendid ceramic objects are still fired in bonfires or primitive open-top kilns burning wood, reeds, straw, dried cactus and cow-pats (here called 'pasture platters': is this standard American English or just a quaint euphemism?). Design and decoration vary from area to area and the ware – all low-fired – range from such *corriente* or utilitarian pieces as the splendidly simple *cántaros* from Coyotepec to such *loza fina* as the flamboyantly decorative sculptural objects popular with tourists which often originate in the furnishings of religious festivals.

The book is well illustrated with one hundred and fifty photographs, forty of them in colour. The text consists of five clearly written but quite short chapters covering in turn 'Firing, Fuels and Kilns'; 'The Clay: its Forming and Finishing'; 'Everyday Wares'; 'Decorative Pottery', and, finally, 'The Artists' in which the work of nine individual potters is briefly discussed. Throughout, no previous knowledge of pottery materials or techniques is assumed. Around these five essays we find the trappings of an altogether weightier scholarly monograph; a map locating eighty-six pottery-making sites, a glossary of Mexican pottery terms, an extensive bibliography and index.

Michael Paffard

Painting Without a Brush

Roy Sparkes
London: Batsford, 1978, £3.95.

It is certainly true that children need a variety of expressive outlets. A teacher who confines them in the strait-jacket of a single media is unlikely to discover all the talent available to him. Paint and brush have always gone together with the inevitability of the horse and carriage and its refreshing to be reminded in Mr. Sparkes lively book of other possible combinations.

Painting without a brush explores the use of an extensive range of techniques with well illustrated examples. There are chapters on finger painting, sponge and rag painting and work with rollers and spray paint. Mr. Sparkes takes these techniques beyond experiment and shows how they can be genuinely expressive.

Colour would have been an asset but its presence would no doubt have put the purchasing price up considerably. At £3.95 it's good value.

Sorry to hear our old friend 'the onward going situation' rearing his ugly head in Mr. Sparkes introduction'.

Edward Phelps

Making Wooden Toys

Roger Polley

London: Batsford, 1978, £3.95.

This is an excellent book, very clearly and attractively set out with many large photographs and a minimum of words. It will be most useful for Primary, Middle and Lower Secondary School teachers of art and craft.

It will prove useful to anyone who is introducing woodwork to youngsters because many of the projects involve sound basic ideas. Most of the projects are of a functional nature but some lend themselves to a more sculptural and 'arty' content. There are projects here for all age groups, including pupils in mixed ability classes. Some of the projects will appeal to the 'constructor' whilst other projects will appeal to the pupil who enjoys a challenge from the game or toy, such as the hidden maze (page 71).

Materials for most of the projects may be bought quite cheaply or even made from pieces out of the scrap box.

The section on basic techniques and treatment of wood surfaces plus some hints were most useful.

Anyone using this book should be able to use the ideas as a springboard for their own original ideas.

Bob Neill

Metalwork Theory

R.A. Mold

London: John Murray, 1979, 95p.

Accepting Bruner's dictum that the first object of any act of learning is that it should serve us in the future, I may perhaps be forgiven for doubting the value of the perpetual pursuit of theory for its own sake in the practical arts.

It may be that the ability, for example, to describe historic and contemporary methods of iron and steel production is indeed an essential element of the behavioural repertoire of the educated man

or woman, yet there must be countless millions who lack this capability without feeling unduly deprived. In craft and technology the function of theory surely is to facilitate the solution of practical problems, and it is in this context that it might be most validly assessed.

Nevertheless, theory lends itself admirably to the paper-and-pencil testing so beloved by distant and anonymous examiners, assessing the equally anonymous multitude seeking the certificated seal of success, however invalid, upon their educational endeavours. It is certain therefore, that many certificate examinations will continue to include a theory paper, and in consequence there will be a need for appropriate learning resources.

It is to meet just this need that R.A. Mold has written a slim but well-packed volume on metalwork theory. It is claimed that it contains in a concise and extremely usable form all the basic theory required for CSE and GCE metalwork, and the claim may well be justified. It certainly deals comprehensively but economically with the production, properties, and uses of ferrous metals, with the characteristics of non-ferrous metals and alloys, and with workshop processes and techniques. It even includes a chapter on design in metal, although the scope of this is obviously limited. Perhaps the most useful features are the review questions at the end of each chapter, and the useful pointers for examination candidates.

With its well-presented information and numerous copiable sketches, this little book could form a useful addition to pupils' individual resources.

Leslie Deem