

A later development in engraving has been the electrolytic process for duplicating plates.

Continued research is being done toward improving inks and paper.

Much of the original work in developing currency paper was done by the National Bureau of Standards in Washington, which created the basic standards for currency materials.

Durable Paper

From research at the Bureau of Standards during many years, today's currency paper has evolved. It has the highest folding endurance of any paper made.

Paper used in the wet intaglio process is 50% linen and 50% cotton, known as "100% rag paper."

The dry process paper is 75% cotton and 25% linen.

The inks used in plate and surface printing are made at the Bureau of Engraving and Printing by blending dry colors, oils and extenders that dilute the blends. Each batch of new inks must first be tested at a testing laboratory to see that it conforms with standards.

Green and black inks for "non-offset" printing were developed for the dry intaglio process.

A recent development is a fluorescent ink that glows in the dark. This ink was first used on a stamp printed in late 1963 to check on whether or not mail coming to the post office had proper postage.

Figures for 1962 show that approximately 4,259 tons of paper and 1,162 tons of inks were used in producing more than 28 billion pieces, including currency, bonds, treasury notes and bills, postage and revenue stamps, checks and miscellaneous engraved work.

Postage Stamps

Besides printing the nation's paper currency, about 30% of the Bureau's work centers around printing postage stamps.

All ordinary postage, postage due, special delivery, air mail, special handling and commemorative stamps used by the United States and its possessions are printed here.

These stamps, printed by the intaglio process, are made in essentially the same way as the currency.

About 90% of the stamps are printed on six single-color presses, while the remaining 10% are produced on three sheet-fed Giori presses, which can print up to three colors on a stamp with one pass through the press.

The Bureau produces its own adhesive, which is piped directly to the gum fountains on the rotary stamp presses in the production area.

As long as postage stamps remain important for mail delivery, new and more suitable ones will be developed, and as long as money is the important means of trade, the Bureau will continue to seek new and improved ways of making it. Making money has, indeed, become a science—a science that the American people certainly could not afford to do without.

• Science News Letter, 87:138 February 27, 1965

TECHNOLOGY

Computers Can Simplify Architect's Work

►THE FULL use of computers to take the drudgery out of architecture and to improve the logistics of building construction, although somewhat experimental, is not far off.

This is the belief of George A. Dudley, recently appointed dean of the new school of architecture and urban planning at the University of California at Los Angeles.

Mr. Dudley, who will go to UCLA after finishing the academic year as dean at Rensselaer Polytechnic Institute, New York, suggests that the new architectural curriculum will have to take into account such developments as:

1. Computers capable of designing all the steel work in a building after being fed the proportions of the building and a general description of the structure,

2. Programming of machines to convert loose sketches of buildings into nearly finished elevation studies, and

3. The writing of various other building specifications by computers, thus freeing designers for more creative efforts.

In the field of contracting, Dean Dudley suggested that computers are moving into "critical path" programming, which will predict when each of the building components, down to the last faucet and door-knob, will be needed in the construction.

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Nature Note

The Cowbird

►The eastern cowbird is a small conical billed member of the blackbird family, Icteridae.

The iridescent male is the only blackbird with dull brown head feathers. His mate is solid gray.

Riding on the backs of cows or walking behind them, the creaky-voiced cowbird eats insects on the bovines or those stirred up from the ground.

Common throughout the United States, the eastern cowbird has several habits unusual to birds. For example, after mating, the male deserts the female.

The abandoned female lays her eggs in nests of other birds and flies away, never to return. Her choice of foster parents may be any of 200 species, but the small chipping sparrow is one of the most common victims.

The orphaned egg has a short incubation period of about 11 days, so that the baby cowbird hatches earlier than its nest mates and grows much larger. The rightful young birds of the foster mother are deprived of food while the intruder eats more than its share.

Often, the smaller birds either starve or are bumped out of the nest by their uninvited guest.

Left with only one child, tiny parent sparrows may be seen protecting and feeding a cowbird fledgling twice their size.

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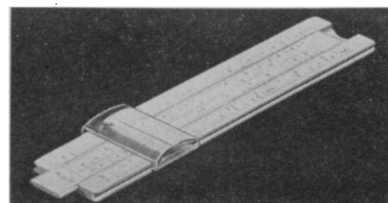


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