Eleusian Remains.

The Standard states that the excavations that are being carried out by the Greek Archæological Society on the site of ancient Eleusis, a few miles from Athens, have just yielded some results of exceptional importance. In a very ancient and well preserved tomb there have been found, in addition to the skeleton of a woman, a number of articles, including ear-rings of fine gold, silver and bronze, several finger rings, sixty-eight small vases of various shapes in terra cotta, two tripods, three Egyptian scarabæi and a small statuette of the goddess Isis in porcelain. These discoveries leave no doubt of the fact that the celebrated mysteries of Eleusis were of Egyptian origin, and were borrowed from the religious rites of the ancient Egyptians. These important relics have been deposited in the National Museum.

IMPROVED "LONG RUN" PERFECTING PRINTING PRESS.

For some time past there has been quietly running in the city of Boston a press which printers who have seen it say is destined to revolutionize the printing of such jobs as are known generically in the trade as "long runs" of book and cut work.

To describe the machine in the fewest words, it is a web perfecting press with patent offset mechanism. It is manufactured by C. B. Cottrell & Sons Company and is the invention of the former senior member of that house, now deceased.

As shown in our engraving, the new machine in appearance is strong, symmetrical, evenly proportioned, ideal in shape and design. There is no important part of the press which is not easily accessible, the location of parts being well-nigh perfect in arrangement.

It is a press for printing fine work by automatic feeding from a continuous roll of paper; prints both sides of the sheet at one operation; and is so constructed that there is no offset in the printing of the second side.

This last consideration is one of the most important features of the new press, for it adds the virtue of quality to that of speed.

The surface of the second impression cylinder is in four sections and is covered by four tympans supplied from rolls of paper within the cylinder. These tympans are set to shift automatically at stated intervals. The movement is not slow, partial and continuous, but quick, complete and instantaneous. The entire tympan covering of the cylinder shifts in one revolution, moving the full length of the printed surface. This is done with no diminution in the speed of the press and no cessation of its printing.

Furthermore, this shifting of the tympan can be adjusted to suit the special needs of each job. Thus, the surface may be changed automatically after every eighty impressions, if heavy cuts are in the form, or it may be set to wind off on 160 impressions or on 240 if the work is ordinary book or pamphlet printing.

The paper, after printing, is cut into sheets and delivered (accurately jogged both ways) on the table. There are no tapes and no fly. The delivery is positive and in its operation the sheet has no printed surface contact.

The cutter is rotary, makes a sheer cut and leaves the edges perfectly square and smooth.

The press prints a 33 × 46 sheet, running at a conservative speed of 3,500 completed sheets per hour—equal to 7,000 impressions on one side.

Altogether, the Cottrell web perfecting press, with offset mechanism, may fairly be ranked among the great achievements in printing machinery of the present day.

GYROGRAPH OR ARTISTIC TOP.

Our engraving shows a novelty in tops recently added to the long list of interesting modifications of this old-time toy.

The novelty in the present case consists in making the point upon which the top spins produce a record of its movements.

The top consists of a heavy disk of iron secured to a spool on which to wind the string. The spool is bored axially to receive a pencil which forms the point on

THE GYROGRAPH.

which the top spins. The handle is swiveled so that the top may be spun while the handle is held in the hand. After the top is set in motion, it is placed on a paper in the position shown in the engraving. The pencil point then traces the intricate curves as shown.

If desired, a slate pencil can be substituted for the lead pencil. The manufacturers state that a well centered hard pencil with the lead cut square across gives the most accurate curves, though not necessarily the most beautiful.

Breeding Habits of Toads.

It was stated that a correspondent of Meehan's Monthly inquired how it was possible to find toads no larger than peas if the tadpole is the first stage of toad life. The reply of the Monthly was to the effect that toads are oviparous or viviparous, according as water is or is not accessible. This is not quite true.

Every toad passes through the tadpole stage, however far he may be from the water, and no case is known of a toad bearing young alive, but all toads and frogs lay eggs. It is true that some forms pass through the tadpole stage while still in the egg, and others carry their young in various ways until the tadpole period is passed, but none of them ever bear young alive, as viviparous in its true sense would imply.

It may be interesting to note some of the curious breeding habits of toads. The remarkable toad of South America, Pipa americana, is the most extraordinary. The eggs are laid by the female, and are immediately transferred by the male to the back of the female, to which they adhere and where they are impregnated. The skin of the back is excited into increased activity by the presence of the eggs, and gradually grows up around each egg, until it is inclosed in a pouch.

Here the eggs develop, passing through the tadpole stage, and when the form of the adult is reached the little fellows emerge and take up an independent existence. Pouches filled with eggs, to the number of one hundred and fourteen, have been observed on the back of a single female. This is the only case among the Batrachia in which the young are nourished at the expense of the parent, but even this toad could not be called viviparous.

Another interesting form is the obstetrical toad of middle Europe. The eggs are laid by the female in a long albuminous string which is taken by the male and wound about his body and thighs. The albumen dries and the eggs become fastened to his body and there remain until hatched.

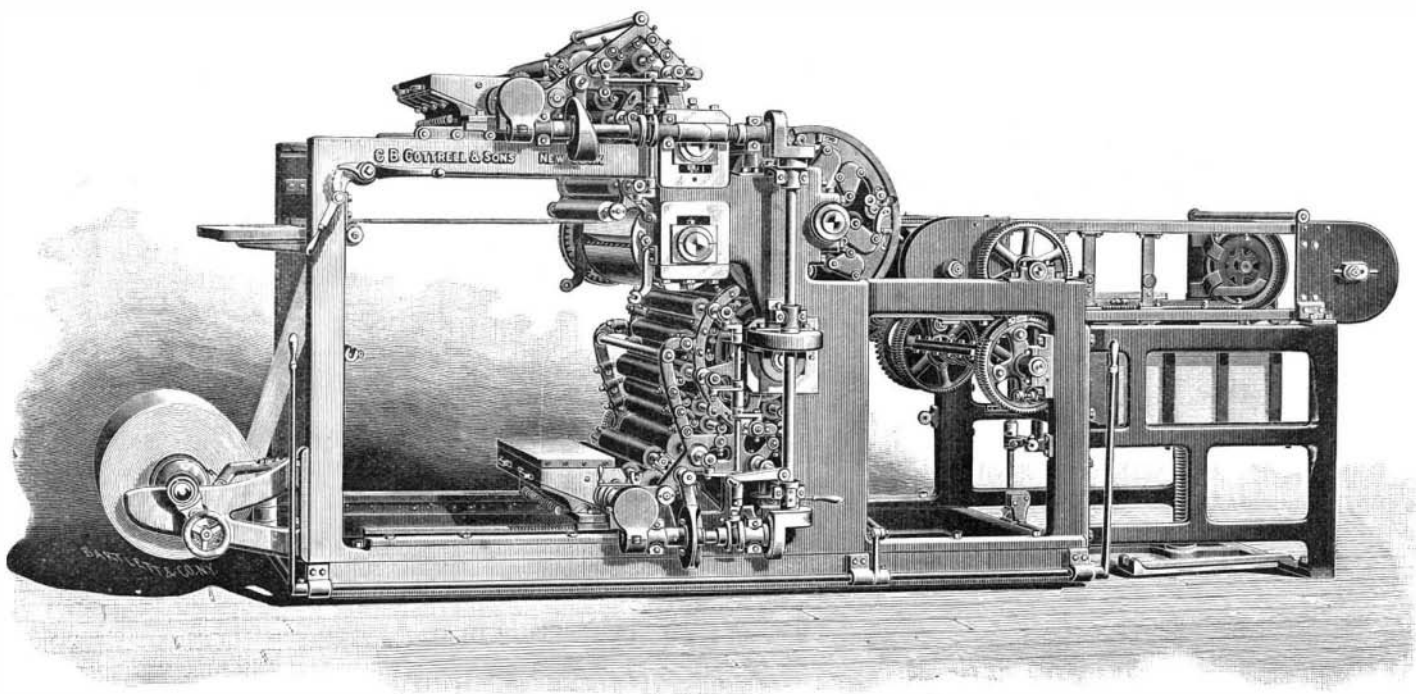
The species Nototrema and Opisthodelphys, of Peru, carry their eggs in a pocket formed by the unfolding of the skin of the back; the young of the former leave the egg while tadpoles, those of the latter pass through their entire metamorphoses while in the pouch.

Our own toads deposit their eggs in long albuminous strings having the appearance of a necklace of black beads. The eggs of the frogs and salamanders are deposited in more or less globular masses of the albuminous substance. We may distinguish the eggs of the salamanders from those of the frogs, for the former have a circular outer envelope which surrounds each egg.

The tadpoles of the toad, unlike those of the frog and salamander, retain their early black color throughout their larval state. They also undergo their metamorphoses while much smaller than the frog. The toad tadpoles take on the adult form when they are literally not larger than peas. At this stage they leave the water in great numbers and make long journeys in every direction, traveling mostly at night, but often emerging from their hiding places after a rain, thus giving rise to the suspicion that they have fallen with the rain.

The hylidæ or tree toads lay their eggs in the water, in small pockets, and not in strings as do the other toads. They also undergo their metamorphoses while small. One of the Mexican tree toads is said to deposit its eggs in the water which accumulates in the axils of leaves and to undergo its changes high above the ground.

In the spring of the year nearly every pond and pool will be found on careful search to contain numerous masses of albuminous jelly filled with eggs in various stages of development. Nothing is more interesting than to bring home these eggs and watch them develop from day to day. Whether they be the eggs of frogs or salamanders, or the strings of toads' eggs, we shall see them all hatch into lively little tadpoles. We can scarcely hope to keep the frog or salamander tadpoles until their legs bud forth and they become ready to live on land, for it requires too long a time, but we may keep the toad tadpoles and watch the limbs gradually appear and the tail disappear until the adult form is reached. The little tadpoles will devour the slime which gathers on the sides of the aquarium, and they will also suck the juices of raw meat. They grow rapidly and in a short time acquire legs and lose their tails, and though still no larger than peas, they are perfectly formed toads ready to take up a terrestrial life.—F. P. G., in Outdoor World.



IMPROVED "LONG RUN" PERFECTING PRINTING PRESS.

A REUTER's telegram of September 11, from Berne, reported the fall of a huge mass of ice from the Altels Glacier upon the hamlet of Spitalmatte, in the Upper Gemmi Pass, causing the death of at least ten persons and the loss of, it is estimated, two hundred head of cattle. A stretch of land nearly two miles in length has been overwhelmed and the pass has been partially blocked.

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