



### Ready for Spring

► **SPRING**, in the fancies of most modern poets, advances from the south, bringing buds and blossoms as she comes. It would be more accurate, and at least as pretty a picture, and possess the virtue of novelty besides, if spring were pictured as coming up from underground. Greek mythology realized this well, in the story of Persephone, but later poets seem largely to have overlooked the latent possibilities of beauty in the idea, like the flowers hidden in underground buds.

For it is true that practically all the flowers you are going to see in woods and fields this spring are already there. They were made last year and packed securely away in buds, to await the coming of the next blossom-time. Some of these buds are merely tucked away among the bases of last year's stems, as in violets, bloodroots and hepaticas. Others are more deeply embedded in bulbs or corms, as in fawn-lily, trillium and jack-in-the-pulpit. Some are even high up, on branches freely exposed to the full fury of winter gales; this is the case with all flowering shrubs, trees and woody vines.

These prefabricated flowers have to be protected during the winter not only against cold but against the cruel drying effects of the cold winds, that rob them of water while the plants' roots and stems are unable to bring up new supplies from the frozen soil. Hence the stout scales that cover tree and shrub buds, with their added protection of waxy or varnish-like coatings, or sometimes thick little pelts of plant hairs. Buds hidden under ground do not need this kind of protection and above-ground buds close to the surface usually receive at least partial protection from

snow and dead leaves, so they are as a rule less elaborately armored.

All such flowers-in-waiting receive the greater part of their protection against freezing not through any means for keeping warm, but through sap so much concentrated and thickened that it cannot form the ice crystals that would wreck the cell walls through their expansion. The sap of wintering plants is more like mucilage or syrup than it is like the watery fluid that runs

from tapped maple-trees and cut grapevines when the weather grows warm.

Thus the tight-folded, snug-packed flowers wait, concentrated in both form and fluid contents. When moisture becomes more abundantly available again they are ready to use it freely, both in expansion of what is already there and in rapid growth of new parts. The natural recipe for spring flowers is almost as simple as "Add water and serve."

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### ARCHAEOLOGY

## America's Culture Ancient

**Renaissance in Central America was a century or two earlier than in Europe. Mayan learning was revived in twelfth century by the Toltec, Quetzal-coatl.**

► **A REBIRTH** of learning took place in Central America a century or two before the Renaissance in Europe, Dr. Herbert J. Spinden of the Brooklyn Museum reported.

Most of the old Maya science with its highly developed astronomy and accurate calendar, in little use since the sixth century, A. D., was revived in the twelfth century under the Toltec man-deity, Quetzal-coatl.

The realization that the American continent has a culture fully as ancient as that of Europe and that an advanced civilization was developed here independently offers new hope of uniting the peoples inheriting this tradition, Dr. Spinden pointed out. All the Americas, North, South and Central, have in common the tradition of the Indian.

Nacxita Quetzal-coatl, who introduced the "plumed serpent" motif that distinguishes Toltec agricultural design, had a deep knowledge of Maya learning, Dr. Spinden stated. This is especially true in relation to the length of the tropical year and the appearance of the planet Venus as an evening and morning star. Details of his monuments show this deep understanding of the earlier civilization, also testified to by the orientation of his temples, especially the House of the Magician at Uxmal in Yucatan.

Quetzal-coatl, the Toltec emperor whose kingdom was the greatest in the New World, developed an abbreviated calendar based on the one used by the Mayas. To be accurately used for setting archaeological dates, however, it must be employed along with the more

detailed Mayan calendar. It was almost over-simplified.

It is these two calendars that make it possible accurately to date archaeological discoveries in Central America back to the time of Christ and even before. Such astronomical events as solar eclipses and phenomena of the nearer planets check to show that the dates are accurate.

Returning to Uxmal last April, Dr. Spinden found that the House of the Magician, covered with many signs and symbols of Quetzal-coatl, had been repaired to make it a safer tourist site. In the course of this work, one of the inner walls had been breached and a hitherto unknown temple exposed. The workmen probably did not realize the importance of the inner temple they entered, Dr. Spinden said. This was probably the original used by Quetzal-coatl for his astronomical observations. Several other temples in honor of this hero-god had been super-imposed upon it.

The inner temple is oriented so that its axis is only three minutes of an arc different from the famous base line at Copan, made by the Maya fully six centuries previously, Dr. Spinden's recent observations indicate. Such exact construction shows that the man who was made a god eight days after his death had thoroughly understood how the ancient Maya oriented their buildings so that each year the tropical year could be noted by observing points of sunrise and sunset. This gave them a year dial to measure time more accurately than our calendar in use today.

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