

# DOWN TO EARTH

By ALAN DEVOE

## *Instinct and the Dauber Wasp*

INSTINCT, said Professor Mark Hopkins, is a propensity prior to experience and independent of instruction. The definition is one of thousands hazarded by scientists and laymen, theologians and poets, as through the ages men have watched with wondering eyes the arrowing, unhesitant flight of a wild duck toward the distant place where, instinctively, it knows its goal to be; or the instinctive engineering of an oriole weaving the fantastic patterns of its pensile nest; or the instinctive crouching of a just hatched grouse chick in the concealing grasses when it sees the shadow of a wheeling hawk. In all the universe around us, and in the secret regions of our own secret hearts, instinct everywhere pervades: profound, unlearned impulses giving guidance to the lives of ants, birds, beasts and men and all the creatures of the earth.

It is not surprising that the tremendous and obscure phenomenon should appear capable of interpretation in many different ways to many men. For a school of

psychologists eager to squeeze the cosmos into a mechanistic hypothesis, instinct has appeared to be "inherited tracts and patternings established in the central nervous system, derived from behavior originally intelligent." To a philosopher, staring at earth and stars with a heart rather more full of poetry, instinct has looked to be "the sweet, grave, natural guidance of the universe." To unreckonable numbers of primitive peoples, living close to nature and profoundly conscious of huge Mystery behind and beyond the appearance of phenomena, the behests of instinct have seemed a kind of direct communication, a superintending guidance, from the very center-of-essence of that enormous and unknowable Great Spirit. It is not likely that all men will ever agree as to instinct's deep, ancient well-springs, or its purpose, or even the technique of its operation. On one point, though, they cannot disagree: they cannot fail to think that instinct is in its way as strange and stirring a thing, as much a won-

der, as stars or sunsets or birth or death. It is one of the enormous marvels of our earth.

No scientist so dry and positive, no theologian so pat and prim as not to gawk a little and entertain a queer feeling of humility and ancient awe when he watches the performance of such a creature as our common little mud daubing wasp. The mud dauber is a most familiar insect. It has been seen by everyone who has ever entered a farmhouse attic or a hayloft. Its life-ritual, carried out at the bidding of the inner urges of instinct, and these only, must make any but a grossly apathetic watcher feel curiously humble and stirred.

The dauber wasp is not a social insect, like the yellow jackets and hornets, but solitary. After the brief contact of copulation in the spring, the female goes alone to make her nest. It is in June, generally, or a little later, that she sets out on a flight to a brook bank or a marsh to gather mud. Scratching up particles of moist earth, she rolls and shapes them into a tiny pellet and bears it off to the barn or attic that she has selected for her site. Arrived at the old beam or timber to which the nest is to be affixed, she presses the ball of mud gently against the rough surface of the wood. Slowly, dexterously, she

pats and shapes it, flattening it until it has become a thin disc which will dry quickly. This is the cornerstone, so to speak, of the nest's foundation. As it dries, the dauber flies away again for the gathering of further material. Pellet after pellet is slowly added to the original base, each new deposit smoothed and flattened as the first one was, until in time there results a broad, flat, earthen platform. It is the finished foundation, now, upon which the nest itself is to be built. The dauber is ready to begin the construction of her cells.

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For the making of a cell, the wasp brings precisely such earth pellets as she has previously been carrying but now, when she comes to the nest site, she does not flatten them into little discs. She shapes them into rings. Ring upon concentric ring she builds, shaping and hollowing them by adroit manipulation of her head and mandibles. The task engrosses her utterly. There comes from her, as she models and moulds and scrapes the plastic mud, the squeak and drone of wasp singing. It is the music of her shimmering wings being rubbed together. As a man does, she accompanies her absorbed labor with

the rhythmic utterance of sound. Raptly, singing, she increases the concentric circles of the cell; and then abruptly she stops. Instinct has informed her that the cell is finished now. It might have contained one less circle; it might have contained one more; but it does not. The sense of instinct is not flexible, like thought. It is rigid and unaltering, like the succession of the seasons. In the cell upon which the wasp has now ceased labor, the concentric circles which compose it are just fifteen.

If her work of masonry is not interrupted by sudden death, always near and shadowing in insect life, the dauber may increase the number of nest cells, in time, to as many as eighteen or twenty. But there may, perhaps, be a chance to finish only five or six, or only one. Whatever the final number may come to be, therefore, the next step is in any case the processing of the cell that is wholly completed. The cell needs to be stocked with food. The dauber leaves the dried and hardened cell now and flies forth searching. She is searching, with the rigid purposefulness of all her instinct driven activities, for a spider. When presently she finds one — a yellow-banded garden spider, perhaps, in the meadow grass — she darts down quickly

and lights upon it, thrusting her sting into its body twice, in two unvarying locations: one jet of poison injected on each side of the oesophagus, in the thorax. From the wound sites thus instinctively selected, the dauber's poison radiates in the spider's body in such fashion that the spider does not die. It is seized, instead, only with a lasting paralysis. The spider still breathes, but cannot move. It is rendered helplessly passive as the dauber carries it back to the nest site and stuffs its heavy-fleshed body into the completed cell. It remains unmoving as she deposits upon its breast a tiny, gleaming, yellow egg, and as then, with droning wings and rapt concentration, she seals the cell tight shut with a heavy stopple of fresh mud.

It is three days after the spider's entombment that the little yellow wasp egg hatches out a little yellow maggot. This is the wasp larva, a thirteen-segmented tiny-headed grub, and instinct instructs it as surely as its gauzy-winged begetter was instructed. In the darkness of the cell, the larva fastens its mouth upon the fat belly of the spider, still paralytically alive, and begins to suck out the blood and soft flesh that have thus been kept fresh and undecomposed during the larva's incubation. For a week or

so, in the darkness, the larva sucks and feeds, while the life of the spider ebbs and flickers and finally stops, and not once does the larva make any excretion. It increases its size sixfold, and presently sends forth from its mouth a liquid silk, and with intricate weaving motions begins the encasing of itself in a tubular cocoon. By the seventh or eighth day, the cocoon has become a finished silken cylinder, open only at one end. The time has come now for the larva to void, in a single mass, the accumulated excretions of its whole larval life. The mass bungs shut the cocoon's orifice, drying to a stone hard stopple. The larva is wholly encased. It is ready for pupation.

For nearly a year the metamorphosing dauber inhabits its silken, dung-stoppered cocoon inside the mud cell. Through autumn and winter and most of the following spring it undergoes the slow transformation of its thirteen-ringed worm's body into the body of a wasp. Then, in the warmth of some May morning, it stirs and wriggles, and its skin splits, and it has suddenly become a creature very like an adult wasp. Very like, but not quite. Its new wasp's body is the color of pale straw and its wings

are only little pads of folded tissue. Its legs and antennae are so colorless as to be almost transparent. For a month longer, therefore, it remains quiet in its cell, and slowly as the days pass, its body is dyed with pigmentation.

A tinge of yellow, and then of violet, and finally of black, colors its enormous eyes. The blue and yellow mottlings of adulthood spread over thorax and abdomen, shaping in clear, hard patterns. The wings are expanding and strengthening now; the legs and antennae have grown dark. The wasp feels within itself a tremendous stirring, a surging, irresistible drive of interior compulsion, a clamor of instinct to seek light and flight and the feel of the June sun. Quickly it scrapes and saws at the mud masonry of its cell, and makes a hole. Briefly it extrudes its head and thorax, briefly fans its hardening wings. Then, in an instant, it is off in flight in the summer air. It will find a mate presently, and go seeking mud to build earthen cells of fifteen concentric circles, and hunt for a spider that shall be provender for its own young. The cycle of dauber wasp life, instinct triumphant, has come the full circle of completion.



# THE LIBRARY

## *Sane Books in an Insane World*

BY MARY M. COLUM

A COMMENT that Eugene Lyons makes in *The Red Decade*<sup>1</sup> on a remark of Ralph Bates's — "We communists understand that revolution" (i.e., the French Revolution) — throws a good deal of light on peculiar happenings in our world today. "These people," Lyons says, "had taken over not only the Russian Revolution and its terror but the French Revolution and its terror, and all revolutions since the day Cain turned on Abel. In a kind of political megalomania they had identified themselves with History." This is certainly one of the reasons why the world today is in an insane state.

Before our time a cause was just a cause — men might die for it, but they did not set it up as something the whole process of history was making towards; they did not pretend to know what the end-product of history was. But in our time the revelation has been made to every good party man in every totali-

tarian state. In one section the end-product of history is the classless state; in another it is the supremacy of the Nordic race. Knowing what the end-product is, they can justify the means of reaching it. They can identify themselves with the process and so become megalomaniacs. The end being the real thing, they can indulge in any kind of trickery, hypocrisy and crime to reach it. *The Red Decade* tells us earnestly, eloquently, and at the same time ironically and humorously, what the megalomaniacs and their dupes have been up to in America.

The author associates the epochal development of communism with the third and fourth of the five periods into which he divides the history of the Communist International. The third period began with the famous Five Year Plan, the fourth after the Comintern Congress of 1935, ending with the Stalin-Hitler pact with which the present war began.

It was in the third and fourth

<sup>1</sup>\$3.00. Bobbs-Merrill.