CARR

LA MONTÀNA LLORONA*

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Photographs by Margaret Hogaboom and the Author

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TOWARD the end of April the high valleys of southern Honduras, which have lain waterless beneath the fierce tropical sun since November, begin to dry up. One can count the boulders in the once lush *potreros*, and the scant, green carpet has withered under the dusty pines on the mountainsides. The cedars and the stubby-limbed ceibas wait leafless for the rains of May; only the imperturbable mimosas, the *coyol* palms, and the figs and *guamacastes* along the watercourses relieve the brown monotony. The cows go dry; the steers are skinny and listless and seek shade in preference to the tasteless stubble. At night thin red lines snake along the flanks and summits of the mountains, where ground fires scavenge in the crisp remnants of the pine woods understory. The wind that sporadically sweeps up from the Pacific toward morning is hot, like air from Texas prairies or city asphalt.

Toward the end of April, too, our nerves unravel. We begin to get sick of the *verano*, with its blue haze of smoky dust, and its tough beef, and two canteens per rider per afternoon jaunt. Our spirits droop in the heat and drought, and we wonder pettishly if it will ever again be cool and wet. Our bitterness mounts with the realization that we must wait for the rains of June.

But is June really the only way out? How about the 6,300-foot peak of Uyuca that rises at the valley's edge only two miles or so away? And how about Portillo and Monte Crudo and El Volcán? They are all much nearer than June and are cool little isolated worlds, as abruptly disjunct and unexpected—and as welcome—as a palm-shaded well in the Sahara. Up there where the clouds cruise by on the unhindered trade wind, the pine woods give way and the *montaña*, the cloud forest, sucks water from the eternal mists and mocks the forty-inch rainfall of the valley below.

From various points in the valley around Escuela Agricola Panamericana ten cloud-forested peaks may be seen. A visit to even the nearest of them means a long, hot climb, but the reward is great and the climb itself is interesting. It takes one out of the valley with its chaparral and coyotes into the

* As one wanders about the highlands of Honduras and asks the people the name of their highest local peak, the answer comes back, again and again, *"La Llorona;"* that is to say, *La Montaña Llorona*, which means "The Weeping Forest." The people thus allude, with characteristic imagery, to the tearlike fall of water that condenses on the trees of the cloud forest. How the word *montaña* came to mean forest is another story.

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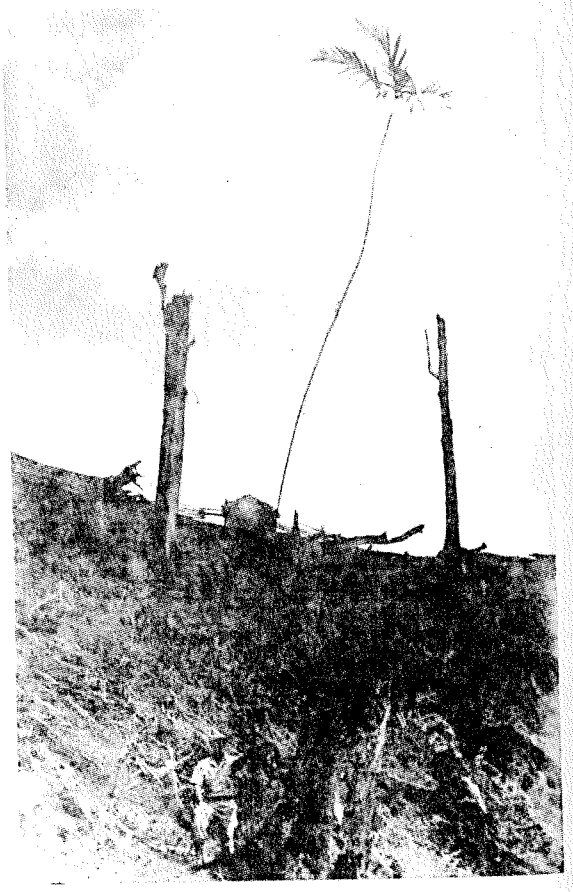
open pine woods of the surrounding hills, with a very different fauna. A couple of thousand feet of this parklike *ocotal*, and the *ocote* pine is replaced by another species, known locally as *pinabete*, often burdened with epiphytes and sometimes mixing or alternating with liquidambar, the familiar, beautiful sweet gum of the southeastern United States. Each of the transition areas between these vertical zones is the equivalent of many miles of latitude in the biotic changes it brings, and each tempts the biologist to tarry. But in the drought of April it is better to climb on, emerging from the *pinabetal*, crossing the fringing fields and blackberry tangles, pushing through the second growth *guamil* and passing at last between the outer columnar trunks of the *montaña alta*. Abruptly, midday changes to owl's-light, and the dry breeze behind is damped to a slow drift of air that is 8–10 degrees cooler than that in the valley, and heavy with moisture and the smell of wet plants.

The cloud forest community is primeval and self-perpetuating. As in most natural mesophytic climax forests, the taller trees meet above in a continuous leaf stratum, which opens only here and there to admit splotches of sunlight. Competition for light among the numerous species of gigantic oaks and *aguacates* leaves little for the plants of the dim understory to fight over, but tree ferns and spindly palms thrive, varying in relative abundance from one forest to another and occasionally attaining heights of thirty feet and more. Giant-leafed wigandias and a purple-flowered fuchsia glean light in the shadows. The curious tropical melostomes, with a host of species in the lowland rain forest and a few others in the dry uplands, here show their versatility in a whole new series of forms, which range in size from small shrubs to fair-sized trees. The smaller plants are tender, gloom-loving begonias, aroids and peperonias, pteridophytes and mosses in endless variety, lichens, liverworts, and algae, all of which grow equally well on the ground and on the grotesquely buttressed, deeply fluted, and vine-embraced trunks of the older trees.

It is next to impossible to look up and determine with certainty which leaves belong to a particular tree. The confusion of interlacing branches is complete, and a tree which bears, say, 3 tons of leaves may, according to my reckoning, support 5 tons of epiphytes ranging in bulk from microscopic algae, tiny mosses, and half-inch orchids to enormous thick-leaved, woody parasites, one individual of which may replace a third or even half of the original tree crown. On one 18-inch length of tree-fern trunk I was able to find 24 species of plants, and I am sure that a botanist would in several cases have distinguished between species that I lumped together. On the drenched and windy peak of El Volcán I climbed a tree which was twisted and wind-pruned like a tree on ocean dunes and which had the usual investment of mosses, selaginellas, and filmy ferns concealing every inch of limb surface. Besides this, it bore four different kinds of leaves in approximately equal abundance, and I would have challenged any botanist to determine which belonged to the original host trunk without making a laborious dissection of the tree.

In the high but protected and relatively level coves and glens, such as the superb Plano Aguacatal in the San Juancito range, or the little hidden plateau where the waters of the Santa Clara arise on the slopes of Monserrat, a number of oaks, *aguacates*, and other trees unknown to me, grow to immense size, and the forests surpass in stateliness anything in my experience.

To me, however, the dominant plants of the cloud forest are not the giant trees but rather the



A skinny palm of the genus *Chamaedorea* from a deep cloud forest on El Volcán.

Epiphytic cacti hang from trees in the San Juancito Mountains. In June these pendant ropes bear lovely orange-colored blossoms at the ends.

epiphytes. The most important factor in the development of these woods is water vapor—not precipitation—and the air plants, high and low, respond more directly to this influence than those with roots in the ground. If a tree wins out over its neighbors and rises above them, thousands of unbidden guests seek to share its advantage. They pile up in sodden tons on the trunk and branches and crowd the leaves at the tips of the slenderest twigs. During heavy rains the added burden of water they hold is often too much for the great limbs, and they may crash to the ground, ripping out sections of the trunk as they fall. Apparently, the normal ultimate fate of the big forest trees is to be overcome by epiphytes, insidiously, leaf by leaf, or by catastrophic collapse, or by a combination of the two.

The dominance of the epiphytes is particularly obvious in the exposed levels above 6,500 feet, where the large-leaved trees of the protected places are replaced by heaths, *Podocarpus*, wax myrtle, and other small and hard-leaved species. It is difficult to explain this transition to a dominantly ericaceous flora on these high peaks which receive a maximum of water through condensation of moisture from the nearly continuous winds, unless it be that the stronger winds augment the hazard in a temporary failure of the moisture supply. These scant-leaved, dwarfed, and wind-tortured trees are often little more than framework for the support of masses of air plants, and a tree that at first glance appears to be alive may be nothing but a corpse, completely enshrouded by the flora that killed it.

At 7,500 feet on Peña Blanca the vegetation is a wild, unsorted hodgepodge. There is no distinguishing between limbs, trunks, and roots, for all loop and twist and sprawl about on the steep rock faces beneath a heavy, wet mat of lower plants. Only here and there a plume of leaves projects from the crazy mass to mark the site where a tree is trying to make a living in the face of almost insuperable obstacles.

A feature of the cloud forests almost as striking as the lavishness of their plant life is their relative poverty in animals, a poverty both in species and in individuals, but most markedly in the latter. Expecting to find a luxuriant environment supporting a dense and varied animal population, one enters the woods prepared to marvel at the fauna. It is entirely possible to wander about for hours, however, and even for days, amid this floral splendor and see only a little more in the way of animals than might be found in a well-kept greenhouse.

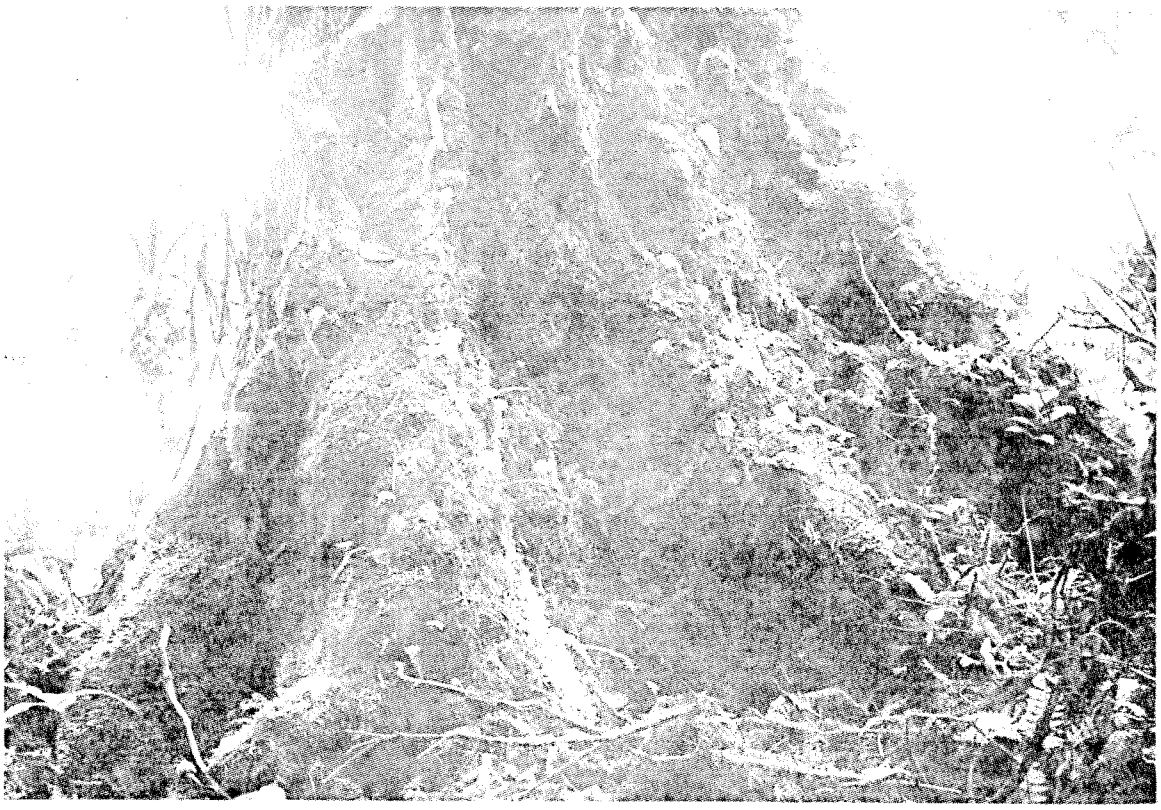
To illustrate the sort of jolt which this hothouse sterility delivers to one's preconceptions, consider the case of the bromeliaceous air plants. It would be hard to mention a minor environmental

niche which holds, and usually fulfills, more promise for the herpetological collector than these epiphytic, water-storing plants of the pineapple family. In many regions, if a bromeliad can be found, the reward of from one to a dozen or so specimens is almost automatic. In the tropics, humid or semiarid, the smooth, broad-based leaves and nearly permanent axillary pools of cool water offer irresistible quarters for various species of frogs, salamanders, lizards, snakes, insects, and mollusks, and some of these have become drastically adapted in structure to life in air plants. These facts are well and widely known, but to the seasoned collector who, reading this, may find their repetition tedious I suggest that he go with me to Portillo de los Arados. Here the forest climbs a 60-degree slope from a fern-shaded spring and rill among the rocks to the tip of a 6,000-foot peak, and the trees bear more bromeliads than I ever saw before. Or, rather, I should say *bore* more bromeliads, because I think we clawed down half of them in the excitement of our conviction that here, at last, we would find salamanders on the Pacific slope of Honduras. We hauled them down, one after another, dumping upon our shivering persons the quart or gallon of cold water that each contained and finding not one single vertebrate animal. Of invertebrates there were only some sow bugs, an occasional centipede, several scorpions (one of which stung me), and swarms of ants (nearly all of which stung me).

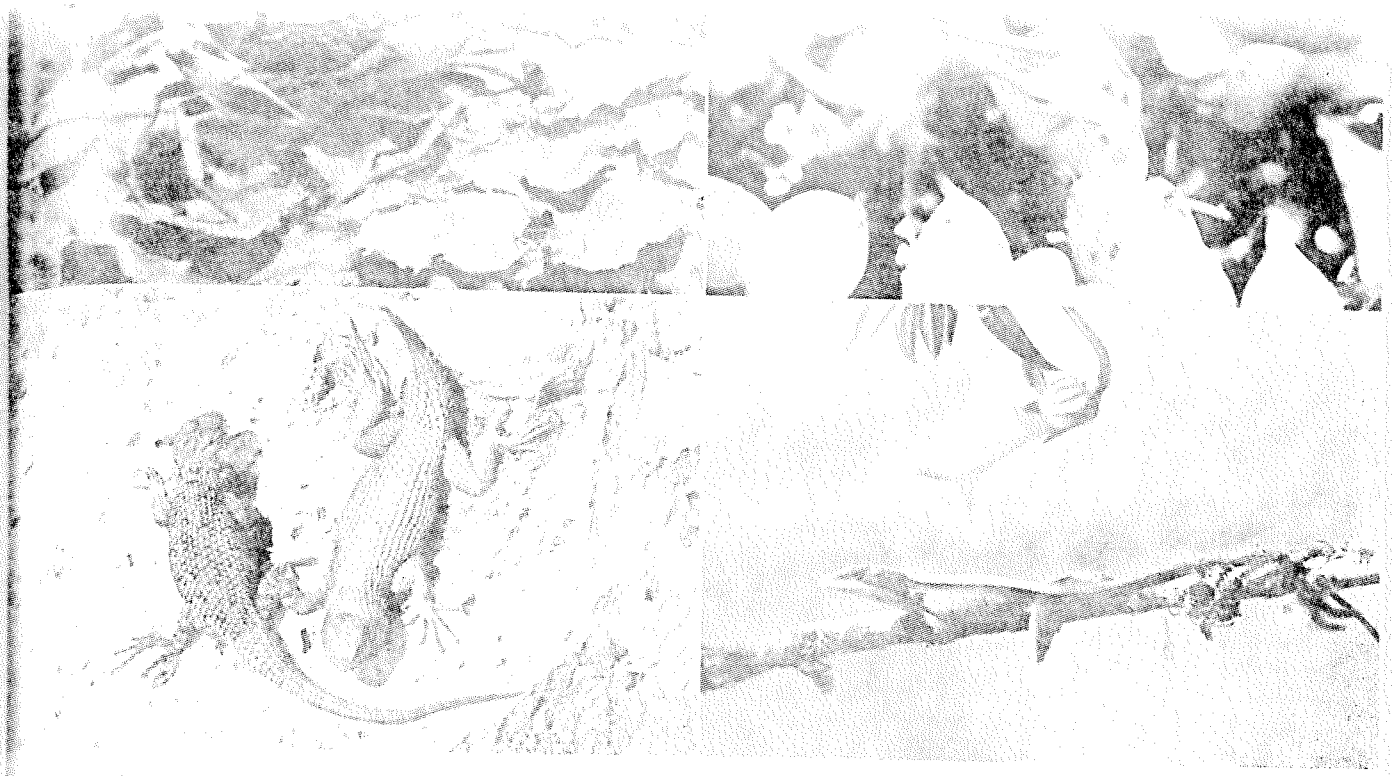
After that, we sulked in the valley for nearly two weeks and did not go near the high woods.

But this was a mistake. When finally we returned it was to spend the night in a tiny milpa deep in the forest of El Volcán. We slept on the ground and were awakened in the vaporous dawn by the ethereal songs of scores of *jilgueros*, the incomparable notes of which express so precisely in fluid sound the spirit of the high forest. We lay under our tarpaulin watching the heavy white mist drift over us and listening to the ecstatic notes of the unseen birds, singing in a cloud, and forgot for good the fiasco of the bromeliads.

Much later, on this same mountain, I had the supreme reward of seeing my first male quetzal. It was 5 : 30 in the afternoon of a day spent in fruitless search of quetzals. We had scaled the dripping peak of El Volcán, descending it on the opposite side and laboriously working our way back around the base to the homeward trail. As the sun was setting we crossed a little clearing bounded by the towering silvery trunks of the primeval forest. I sat down to spend the few remaining minutes of daylight



The buttressed base of a giant *aguacate* at Rancho Quemado.



Upper left: This little crab is one of the very few inhabitants of any size of the icy brooks and springs of the highest forests. *Right:* A cloud-forest tree frog peers from a cluster of diminutive orchids. *Lower left:* The coloration of this spiny-scaled mountain fence lizard varies from bright green to sooty black. It lives on dead logs in clearings in the cloud forest. *Right:* A female anoli from an elevation of 7,000 feet at Rancho Quemado, San Juancito Mountains, type locality of the subspecies.

watching the forest border for anything that might emerge while my companion went to fetch the horses. The brief sunset spread flame through the clouds behind the western ranges, and desultory shreds of mist began to spiral down into the milpa. For once there was almost no wind, and the only sounds were occasional incredibly sweet passages from the *jilgueros* and the low, duotone chant of the Mexican trogon in the depths of the forest. Suddenly a harsh cackling call came from a tall tree at the edge of the woods. I rose and walked toward the tree while the call continued. As I approached, several green toucanets emerged from the tree and flew off over the milpa, pushing their banana-like beaks before them. The raucous cackle continued. Then three quetzals, a female and two gorgeous males, rose above the crown of the tree. One of the males and the female flew directly into the woods, but the other flew and hopped from one tree to another, often making vertical sallies into the air above and descending again in a wholly uncalled-for series of swoops and dips and pirouettes to display his crimson breast, the blue-green fire of his wings, and the grace of his yard-long tail. This was reward enough, and indeed if the forest grew for no other end than to support this bird it were no waste.

There is a handful of animals which a quiet observer may see on nearly any given visit to any of the local cloud forests. These creatures are for the most part species endemic to montane communities and have wide but necessarily discontinuous distribution throughout Central America. Like most habitues of deep forests, they know how to live inconspicuously in the background of their environment.

If you want to see them you will have to sit on a log and wait. If your log lies at the edge of a clearing you will almost immediately see on a near-by stump a big green or sooty-black fence lizard of the genus *Sceloporus*. If the time is early morning or late afternoon, or if the clouds are drifting through the forest on a gentle wind, you will not wait long for the songs of the *jilguero* or nightingale thrush and the black robin, known here as *sinsontle*. Both are skilled ventriloquists, and, though they may render their flutelike arpeggios from no more than a few yards away, they are very hard to see. Long before you locate a singer a flock of clorospingas will pass by in the lower trees, squeaking as they hop from one berry-bear-

ing twig to another. If you continue to give no offense a slim brown wood hewer will swoop down to a near-by tree and stay to forage a bit.

A slender anoli will scurry along a vine and stop to spread his orange throat fan; or to nap for a moment in a splash of hot sunlight, with arms tucked in and legs pressed back against his tail; or perhaps to creep up with horrid stealth and seize a simple-minded cranefly. A small, short-eared squirrel that has been looking at you in silence for a long time will suddenly materialize, often under your very nose, and try to scold without dropping the avocado that it holds in its mouth. These little forest squirrels are common and unafraid and ask only that you keep the peace.

Sooner or later you will become aware of a tiny, intricate song, sung in an excited whisper somewhere close by. This is Rehn's mountain wren, through some ornithologist's whimsey, and when you finally locate the red-brown dwarf it will have been within reach of your hand all the while.

The robin chirp of the dusky *zorzal* is never long still. Usually the woods echo also with one or both of two other bird calls, one the monotonous and incessant single note of the white-faced quail dove and the other the brooding chant of the Mexican trogon.

Among the few actually conspicuous inhabitants of the cloud forests are the hummingbirds when they are in season. They are of a dozen or more species, and to the eye accustomed only to the common ruby-throat of the United States their variety in size and coloration is striking. They range from tiny mites noticeably smaller than the ruby-throat up to a glossy dark species with a body the size of a man's big finger. During September and October, when the wild *aguacates* bloom and the melostomes and vacciniums strew the ground with shed corollas, the hummingbirds leave the fields and *guamil* and blackberry tangles and move into the depths of the forest in hordes. They suck the high blossoms and make their perfect little nests of live moss covered with lichens and lined with the silken fiber of the tree fern. Their voices are as various as their shapes and sizes, and the males scold and squabble incessantly. One misanthropic species marks the course of any intruder who walks through the woods by repeatedly taking stations on twigs just in front of him and uttering raucous cheeps in outraged monotone, once a second without ceasing until the trespasser has crossed the bounds of what the bird regards as his rightful freehold. Another species vents its seemingly chronic spleen by zigzagging angrily among the trees around the human visitor, often diving at his head at breakneck speed, and all the while rattling out a querulous complaint for all the world like a midget kingfisher. Among themselves they fight bitterly and often, and their quarrels are both intra- and interspecific without bias. If one lies on one's back and stares upward at the level where the treetops interlace high above, one may see pairs of buglike hummingbirds zipping over and under the green canopy like dogfighting planes diving into and out of cloud banks. One such pair may suddenly plunge downward in a breathless spiral, the hind bird following in machinelike detail every intricacy of the mad course of the pursued. They may collide in mid-air in front of the observer's face with what ought to be crushing force and then fly separately away to sit on twigs and preen and await the fine new surge of anger that will tune their incredible little muscles for more joyous combat.

Hummingbirds are birds apart. They are miracles of mechanical design and physiologic efficiency. Their initiative and courage are beyond reproach, and in many species the splendor of their coloring cannot be matched in the biologic world. But few who know them will go much farther in their praise. For the rest, they are peevish and restless and generally ornery and are no comfort either to themselves or to anyone who lives with them.

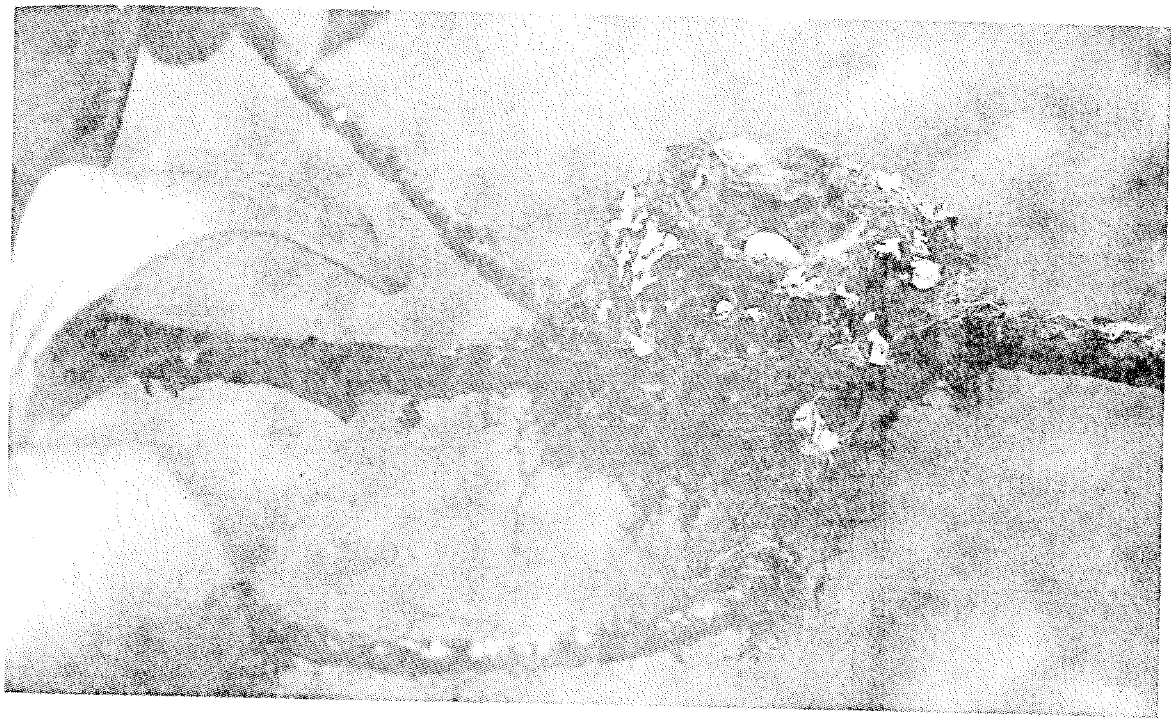
Of invertebrate animals the most noteworthy—in its abundance as well as in the incongruity of its occurrence on a mountain peak—is a crab. To me, a crab has no business in fresh water and much less in a cloud forest, and I still feel an irrational sort of skepticism every time I see one. The small, black mountain species lives in the beds and borders of foaming creeks and rills and around the near-by springs, where it digs caves under rocks where salamanders should be and heaps up mud pellets like crayfish should do.

Perhaps of just as much consequence in the forest community as any animal that I have mentioned are the several kinds of mice and at least two species of shrews that live underground in the root mazes, but they are almost never seen unless trapped. It is also easy to miss the glistening, yellow-speckled plated lizard that hunts sow bugs and wolf spiders and spindly-legged crickets in the leaf mold.

Besides the few common and characteristic denizens that one can count on meeting on almost any trip into the *montaña*, there is a long list of creatures which are seen only sporadically, or very locally, or perhaps not at all and which the forest holds in reserve to shock the observer out of

growing smugness over the authority of history. Thus, only one time, after hundreds of hours of observation, did we encounter an anteater, and on the same day we collected our first and only penelope—the big burro-voiced *pava*—when we walked up under a pair eating berries in a tree at Rancho Quemado. We had hunted deer and frogs on Uyuca so many nights that when finally our lights struck red fire from eyes in the trail ahead we only stared stupidly as a puma loped slowly up into the darkness and *guamil* above. These animals of rare occurrence not only

Neither the soil nor the vegetation of this mountain shows any notable difference from those of other mountains that we have visited. The only place in Honduras where pocket gophers are known is Alto Cantoral, north of Tegucigalpa, which is the type locality and only known range of the Honduran pocket gopher, a subspecies of the giant pocket gopher, and probably the same animal which occurs on Portillo. It seems very unlikely that we have merely missed them elsewhere, since their excavations and mounds are very conspicuous and would be next to impossible to over-



Hummingbird's nest from the windy peak of Uyuca. Constructed of live mosses, it was camouflaged with lichens and lined with the silky fiber of the tree fern.

lend the promise of drama to every collecting trip, but the very eccentricity of their distribution may present problems of irresistible interest to the ecologist.

For example, consider the faunal vagary to be seen in the colony of giant pocket gophers on a mountain in El Paraiso known as Portillo de los Arados. Here the forest has been skinned back on all the slopes up to the sheer crest, which is crowned by a *faja de montaña*, a long narrow strip of well-developed cloud forest. In the margins of the woods and in the milpas which skirt it, the ground is honeycombed by the burrows of an enormous pocket gopher, which we have seen on two occasions but have not succeeded in collecting.

look. Whether Portillo furnishes the gophers with something vital which is wanting on the other peaks, or whether their restricted distribution refers instead to some event in the history of the region or of the race, is an intriguing question and one which almost certainly would repay a systematic study.

Another case of interest is that of the quetzal. This incomparable trogon is a characteristic inhabitant of cloud forests from southern Mexico to Panama. Because of its superb plumage it has been persecuted unmercifully in many places, and its scarcity in suitable areas around the larger towns is probably due chiefly to the work of hunters. But in the rural, south-central part of Honduras, where

Tall tree ferns from interior of the forest of Uyuca at an elevation of 6,000 feet. Vegetation is characteristic of the more protected glens and ravines.

our series of cloud forests is located, guns are scarce and where found are usually muzzle-loaded with black powder and a quarter-inch cube of bar lead. They are not often used for shooting at birds and even less frequently for killing them.

It seems probable that here the infrequent occurrence of quetzals is due more to the restricted extent of the individual forests than to the killing of birds. At San Juancito there is far more hunting than in any of the other local forests, and yet the quetzals hold on within sound of blasting at the Rosario mine, because the woods there is almost unbroken over thousands of acres. Likewise, we found quetzals in the Yuscaran Range around El Volcán even though the 15–20 square miles of cloud forest there are spotted with *ranchos* and dissected by cultivation. In the smaller forests, however, such as Montañuela, Portillo, and Monte Crudo, although the physiognomy of the vegetation is identical, quetzals are entirely unknown.

In this case the limiting factor would appear to be food. Quetzal existence apparently depends upon a continuous abundance of small fruits. There is evidently an areal threshold below which a given forest is too small to yield these fruits in perennial supply. The birds venture from their primeval habitat far enough to augment their diet with the luscious blackberries that abound in the marginal tangles (as do also the peccaries and, where found, the mountain tapir), but they evidently never migrate and are actually prisoners in their cloud-swept jungles. If the fruit crop fails for a single week they must starve.

Of equal interest, zoologically if not aesthetically, is the *tamagas* of San Juancito. The *tamagas* is a short, fat, irritable viper of the notorious genus *Bothrops* (*B. godmani*), which includes the *barba amarilla* (fer-de-lance), the horrendous bushmaster, and a host of smaller poisonous snakes. The curious thing about the *tamagas* is that the only ones we have ever seen were at Rancho Quemado in the San Juancito mountains, where they are quite common. In the places where the sun filters down through a break in the tall canopy overhead, they lie around on the leaf mold, their brown and gray color tones and rough scales making them as inconspicuous as mounds of leaves.

We have visited Rancho Quemado eight times and have only twice failed to see *tamagas*. Al Chable found four in one morning, and fifteen minutes after I had warned Margaret Hogaboom to watch where she put her feet she stumbled over a *tamagas* in the trail. I have collected in Honduras for three years, and the *tamagas* of this colony are the only snakes in the central part of the republic that I should call common. Only here, for instance, would I dare predict that on a given afternoon a snake-collecting jaunt would yield something.

The question of what attraction Rancho Quemado holds for *tamagas* is no great mystery. It gives them deer mice in abundance and an endless system of galleries and intricate moss-lined catacombs beneath the prop and buttress roots of the forest trees. Here they can prowl and forage in comfort when the blood-thickening fog is down and the icy drip turns *tamagas* bodies to lumps of helpless clay. The mice and the catacombs make for what would appear to be an ideal viper environment, and the *tamagas* respond with enthusiasm. Why, then, have we looked in vain for snakes of any kind in identically tunneled and mouse-filled areas in all the other forests?

I believe I know why the *tamagas* do not occur on the other peaks. I think peccaries make life impossible for them. The collared peccaries are ubiq-

Heavy cloud forest above La Tigra, San Juancito.

easily omnivorious, and I imagine that very little that is conceivably edible escapes their jaws. I would not give two cents for the chances of a fat and succulent viper, stupid from overeating or torpid from cold.

Since the pigs do not dwell in the depths of the woods, but rather in the blackberry tangles at the edges, the snake population of a large unbroken tract of forest such as San Juancito is practically insulated from the ravages of the peccaries. On all the other mountains, however, the ratio of *guamil* to *montaña* is so much higher that no section of the woods escapes the sporadic patrols, and snakes cannot survive.

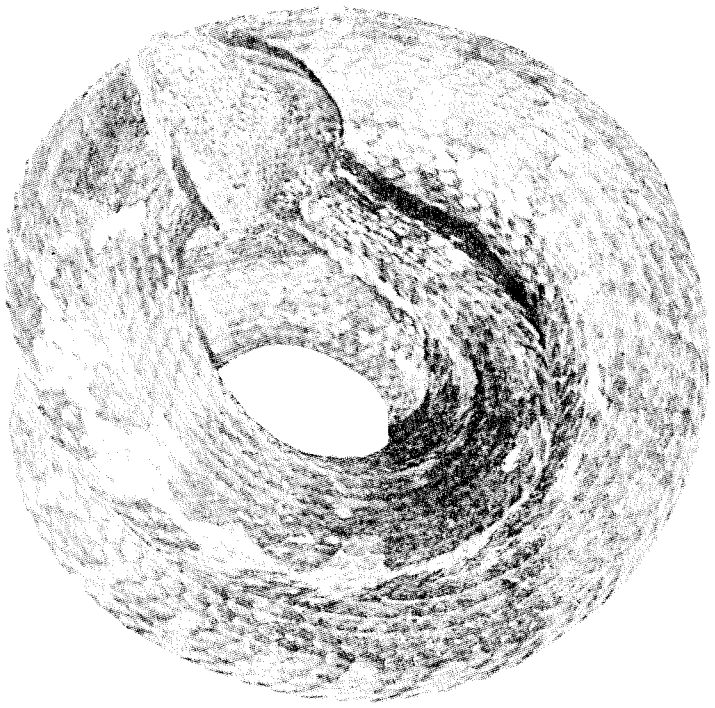
To me, the most curious anomaly of all is the mountain tapir. It outrages my sense of fitness. The mammalogists mostly recognize only one species of tapir in Honduras and so would have us believe that it is one and the same beast that wallows in the creeks of the coastal jungles and scampers about the crags of Chile Mountain. This may be so, but if it is I know of no more impressive example of ecologic tolerance and the broad, flexible outlook. I lived for a month on intimate terms with tapirs in the Nicaraguan rain forest and feel that I know something of their character and aspirations. I cannot believe that the tapir there is the animal that makes the tracks and trails on sheer cliffs of 6,500-foot Pico de Navaja, or ambles about the subalpine *morales* of Batea, picking blackberries, or that ran 6 miles along the knife-edged *filete* of Cerro Brujo to elude completely a gang of mountain-bred dogs. How could the semiaquatic monster of the Huahuashan swamps slake his chronic thirst or cool his hide on the streamless ridges of Bromadero? I don't believe he does; I think it is a different creature and shall cite one minor aspect of jungle tapir personality to support my stand.

A lowland tapir descends the slopes of ravine-side or river bluff in a manner wholly his own and

altogether irresponsible. If he arrives at such a declivity at all pressed for time he merely lets go and falls down. His legs move and usually manage to keep him right side up, but they in no way retard the acceleration of gravity. I have seen and heard this phenomenon several times and each time I marveled when the tapir failed to kill himself. On Chile Mountain he *would* kill himself. We climbed tapir trails there which required more from the arms than from the legs, and which would demand caution from a mountain goat. Any tapir trying to save time on these trails by falling down them would wind up in the vicinity of Cantarranas, some 4,000 feet below and 8 miles to the westward.

A comparison of adequate series of specimens of tapirs from the mountains and lowlands seems to me very much in order, and I strongly suspect that when made it will show at least racial differences between the two populations.

As a biotic environment, the Honduran cloud forests offer the biologist a challenge and promise of reward that would be difficult to duplicate. But, more than this, they hold an aesthetic appeal that is as deep as the mystery of the dim, green woods and as varied as their many changing aspects.



A mature female *tamagas*.