

work of these masters or not was not at all the question. The fact remains that in the preface in which Vogl, Collin and others are referred to as the "great masters" and their treatises referred to as sources used in the compilation of Professor Kraemer's new book, the names of Flueckiger and Hanbury and that of Tschirch are conspicuous by their absence. That Professor Kraemer might have had a particular motive in omitting these names I had no thought of suggesting. That I merely referred to their absence as a "curious omission" ought to free me from the suspicion of any intended unkindness. As reviewer I could scarcely have said less. That later in the text two special references occur to Tschirch's "Handbuch" and that other references can be found to journal articles by Tschirch and his students does not alter in any way the failure to give credit to Flueckiger and Hanbury and to Tschirch as general sources of information, among which even the English translation by the writer of Gildemeister and Hoffmann's treatise "The Volatile Oils," and other special treatises are enumerated.

The writer had no intention to intimate that Professor Kraemer was ignorant of the master pharmacognocists referred to, for such intimation would appear ridiculous to all who know how well posted Professor Kraemer is. Neither was it the writer's intention to intimate that the omission was intentional, for all who know Professor Kraemer also know that he could not possibly be guilty of anything that had but a mere suspicion of dishonor. If reference was had to the omission at all it was, no doubt, because it seemed well nigh impossible even to an amateur, much less to one so well informed and careful as Professor Kraemer. That it did occur merely shows that even the best of us will make slips of omission, if not of commission, with our editorial pens.

That the writer should have offended a colleague of whom he has always thought highly he regrets very much. The real reason for sending you this communication is not that I desire to justify my statement, but that it gives me the opportunity to correct any un-

favorable impression which my statement may have made upon the minds of those who have thought my review worth reading.

Professor Kraemer also objects to my relation in paragraphs two and three and adds

I am at a loss to know to what you refer as apparently you have not understood my position from the beginning.

Under the circumstances I greatly regret that I ventured to write the review as requested. One thing I am certain of, namely this, that I had no intention to hurt Professor Kraemer's feelings any more than to misrepresent him. If I were not absolutely positive of this I should more than willingly apologize to my Philadelphia colleague.

Trusting that for Professor Kraemer's sake you will kindly supplement my review with this letter.

EDWARD KREMERS

#### FROGS CATCHING BUTTERFLIES

I HAVE seen common green bullfrogs, *Rana catesbiana*, catch and eat butterflies—the large, yellow and black, swallow-tailed *Papilio turnus*.

On our summer place in southern New Hampshire there was a brook where the horses were watered. In this pool there were many bullfrogs, and they were not very wild. Passing the watering place one bright, hot day in August, I saw a bevy of perhaps a dozen butterflies fluttering low over the bare, moist ground near the stream. They flew in an aimless and weak fashion not characteristic of this species, and occasionally settled upon the ground, about three feet from the water's edge.

Out of the water crept four big green bullfrogs. They went after the butterflies in the stealthy manner of a cat stalking a mouse. They did not hop or jump, but walked, or crawled, on all fours, flat on the ground—sometimes advancing rapidly, sometimes stopping short with one leg stretched out far behind. Their bodies were strained and quivering, and their interest in the pursuit did not lag for an instant.

When a frog was within a foot of a butterfly it jumped upon it and caught it in its mouth. They ate the butterflies very quickly,

swallowing them whole. I did not see a frog lose one, and I saw one frog catch and eat five. The butterflies seemed to make no effort to get away from them. Occasionally one would alight upon a frog's back. In about half an hour all but one of the butterflies had been caught. The frogs did not try to catch that one. It flew away, and soon three of the frogs went back into the water. The fourth one was apparently too "stuffed" to move.

For many days after this occurrence I watched the watering place, hoping that I might be able to get a photograph of the frogs and butterflies, but I did not see them together again.

I have consulted the best authorities on frogs, and I do not find such an instance recorded.

ALICE MAVOURNEEN MALLONEE

STRATTON, ME.

#### THE ALLEGED INSTINCTIVE FEAR OF SNAKES

TO THE EDITOR OF SCIENCE: Mr. T. B. Dabney's interesting letter on the "Serpent Instinct in Man," appearing in your issue of the seventh, proposes an argument substantially as follows: The fear of serpents in man is practically universal; therefore it must be instinctive. If instinctive, it must survive from a period when the serpent was a menace to the perpetuation of the human race. But such a period can only have existed before man had clothing. Therefore, it existed before his evolution from the brute was complete. But the principal locality in which man, at such a stage of his history, would have had cause to fear extinction by serpents, is India. Therefore India is probably the cradle of the human race.

To what extent the successive conclusions are supported by their premises it is not my present purpose to discuss. I have but one point to make, and that is that the fear of serpents is probably not instinctive at all. I believe it to be the result of erroneous education in childhood, perhaps accentuated by a certain timidity with regard to wild animals in general, resulting from the protected habits of civilized life.

That the fear of snakes is very general is a

fact painfully present to many who, like myself, are studying herpetology with a view to protecting our useful snakes from extermination, and our country from the incalculable losses to agriculture which would thence ensue. The desire to justify the aforesaid fear is mainly responsible for the persistence of a mass of absurd superstitions about even the commonest species of snakes. But the prevalence of this attitude is not, in my judgment, sufficient reason for attributing it to an instinct of self-preservation which was the property of a supposititious brute ancestor of man, and has consequently defied the efforts of education to dislodge it, at least when there is question of first impulses. As a matter of fact, there is an equally general aversion to toads, lizards, spiders, worms and other animals possessing unpleasant qualities. The sudden presentation of such objects produces even the "panic of horror" alluded to, in quite as many instances as the sight of the serpent. And yet, none of the other creatures mentioned can at any time have menaced the existence of the human race.

If Mr. Dabney's arguments were quite conclusive, he would be well warranted in selecting India as the birthplace of herpetophobia. He is quite correct as to the mortality annually due to serpents in that country. Its immediate cause is well known to every one acquainted with conditions there. The natives of India are frequently bitten by venomous snakes because, despite all the efforts of their European masters, they insist upon going barefoot, even when otherwise well clad. If it was the adoption of clothing which first made our primitive ancestor realize that he had an even chance in the struggle for existence, one would surely expect the essential constituent of costume in India to be a pair of boots, whatever else might be wanting.

But there is positive evidence against the theory that the dread of snakes is instinctive. First, there is the common tendency of young children to play with a bright-colored snake, as they would with any toy. An innate horror of snakes as an attribute of the human species is quite inconsistent with such a fact as this.