

Dreams also Comes True in Investigation

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Private universities in Costa Rica usually do not work in order to impulse research in basic investigation. Since I worked for more than 30 years in public university, University of Costa Rica (UCR, acronym in Spanish), where Research is fundamental, it was clear for me that the situation in our private higher education in this field, should change.

In that sense, when I was named as Rector of the University of Medical Sciences (UCIMED, acronym in Spanish), the decision was include that important theme in this university. In fact, joined with Dr. Idalia Valerio, we started working in a small, precarious and bad equipped laboratory, doing some simple experiments. In addition, together with some other investigators of the UCR, Gustavo Gutiérrez and Ronald Sánchez, several studies about the parasite infection in monkeys from the mountains of Costa Rica where performed. In those works, we reported the intestinal parasites present in the howler monkeys *Alouatta palliata* [1], white face monkey (*Cebus capucinus*) [2,3], squirrel monkey (*Saimiri oerstedii*) [4], spider monkey (*Ateles geoffroyi*) [5]. In addition, we reported the presence in blood of *Plasmodium brasilianum*, a parasite very similar to *P. malariae* which is a human parasite [6], as well as some information about others such as *Trypanosoma rangeli* [7], *Trypanosoma minasense* [8]. After these preliminary studies, we start to do our own investigations, some of which were supported by government institutions, and for the first time, two principal projects were initiated. The first research program was: Searching for chemical products, present in plants from the Costa Rican biodiversity that are able to inhibit parasites This program was performed in a biological reserve, Alberto Manuel Brenes Biological Reserve (ReBAMB, acronym in Spanish). The activity of some of those products has been demonstrated against *Plasmodium* sp [9], *Toxoplasma gondii* [10], *Leishmania* sp [11] and *Trypanosoma cruzi* [12]. Even more, in some of these studies we identified the structure of some of the anti-parasitic product [13-15] and some of the extracts showed the activity on cultured cells [16]. All these findings are important, since natural products are studied more frequently each time, and in some cases, as in malaria, the parasites have developed some resistance to some usual drugs, chloroquine by example. The second research program was oriented to study the blood and intestinal parasites present in small mammals, in order to contribute to the analysis of the local zoological biodiversity, specially looking for reservoir of human parasites. The species studied were the rodents *Melanomys caliginosus*, *Heteromys desmarestianus*, *Peromyscus mexicanus*, *Tylomys watsoni* and the marsupial *Philander opossum*. Several organisms were found in the studied animals [17], with at least three new coccidian species, present for the first time in the world [18,19] and other parasite was reported by the first time in Costa Rica [20]. *Babesia* sp. and *Bartonella* sp. were also found in the blood of some animals [21]. In addition, it has been published the complete intestinal life cycles of three *Eimeria* species: *E. marmosopos* [22], *E. melanomytis* [23] and *E. caliginosa* [24].

Now, this laboratory has dabbled in molecular biology with some important studies, one of which has been exposed in a recent publication [24] and some others are coming. More studies with chemical components active against bacteria and fungi, present in plants, are in the way.

This small dissertation pretends to encourage to the younger researches to work hard and fight in order to obtain the goals in the beautiful field of the investigation, remembering that even in this case, the dreams come true.

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