Method of conservation and quantitative analysis of the specimens deposited in preservative liquids in the Helminthological Collection of the Instituto Oswaldo Cruz/ Fiocruz (CHIOC)

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The Helminthological Collection of the Oswaldo Cruz/ Fiocruz Institute (CHIOC), the largest Helminthological Collection in South America celebrated its centenary in 2013. Its history is intertwined with that of the Laboratory of Helminth Parasites of Vertebrates of the Oswaldo Cruz Institute (LHPV–IOC), which began with the fieldwork of Gomes de Faria and his student Lauro Travassos. The Collection comprises more than 38.400 samples and approximately one million of specimens from vertebrates and invertebrates hosts, preserved in microscope preparations (i.e. Canada balsam, hoyer and glycerin) or in preservative liquids (acetic formaldehyde and 70% ethanol). Its specimens are holotypes, paratypes and representative specimens of flatworms (cestodes, monogenoids, digenetic trematodes and rhabdocoels), acanthocephalans, nematodes, gordiaceous and pentastomids. Nowadays, one of the main challenges of the actual curator has been to update and adequate the Collection to the quality, biosafety and environmental procedures of international rules. The preservation method used for the helminths deposited at CHIOC follows the usual techniques in helminthology, but the maintenance of helminths in preservative liquid has been changing according to the advances of scientific research. This study aims to demonstrate and disseminate the methodological procedures for the conservation of parasites, as well as to divulge the results of the quantitative partial analysis of specimens deposited in this Collection. The amount of specimens deposited at CHIOC is underestimated, since the actual amount contained in each vial is unknown, mostly. Thus, the quantitative analysis was made for a better understanding of the diversity of specimens and quality of informations to be inserted in our database. Between May 2015 and March 2016, 572 lots of CHIOC were selected according to their state of conservation. We sorted the samples with few preservative liquid to proceed the removal of it. The changing of formaldehyde to ethanol was made following the biosafety and environmental criteria. First, the specimens were transferred to a Petri dish, emerged in distilled water, and observed for 10 to 20 minutes (according to the size and taxonomic group of the parasites) for the removal of preservative liquids impregnated, mostly acetic formaldehyde. Next, the specimens were analyzed in stereomicroscope, counted, transferred to a new vial and refilled with specific preservative liquid: 70° ethanol with 5% glycerin for nematodes and 70% ethanol for the others. We accounted 8482 specimens of parasites from those 572 lots of wet material. The present study is a testimony of the importance of the specimens preservation deposited in collections. In the case of helminthological collections, the specimens acquired are source not only for knowledge of helminth biodiversity, but also for parasitological studies on taxonomy, systematics and identification of causes of zoonoses. An efficient curatorial work allows those collections fulfill their objectives of maintaining the collection for the studies of interest in health, education in science, scientific dissemination and preservation of genetic patrimony.