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Emerging Conflicts between Biodiversity Conservation Laws and Scientific Research: the Case of the Czech Entomologists in India

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Introduction

The arrests and subsequent conviction of two Czech entomologists by an Indian court in September 2008 has opened a Pandora's box of controversy. Petr Švácha, of the Institute of Entomology at the Biology Centre of the Academy of Sciences of the Czech Republic, and his associate Emil Kučera (an amateur entomologist) were arrested for collection of beetles and butterflies without a valid permit from the Singalila National Park in the Indian state of West Bengal, a violation of the 1972 Indian Wildlife Protection Act and the 2002 Biological Diversity Act. The arrests triggered debate in the global scientific community regarding the implications of biodiversity conservation laws for scientific research (Venkataraman 2008) and underscored the tensions in the three-way relationship between scientific collecting, species conservation, and efforts of nations to protect themselves from biopiracy.

Roughly 1200 scientists from across the world have protested the arrest and have petitioned the government of India for the scientists' immediate release (Dubey 2008). In determining whether the arrest and conviction of the Czech entomologists erected unreasonable barriers to the access of biological resources for legitimate scientific research two pertinent questions need to be addressed: Were the Indian officials overzealous in arresting the two researchers? And is the scientific community justified in its criticism of conservation laws now that two of its own have broken them?

Regulations on Collection of Insects

Insect-collecting regulations tend to mirror regulations for collecting vertebrate specimens, with most countries, including India, enacting umbrella restrictions that prohibit both types of collecting in protected areas. These policies are largely based on data collected from vertebrate populations rather than on data collected specifically for insects, and the legitimacy of these policies for insect taxa has been brought into question (Hook 1997). Although these restrictions are meant to serve as increased protection measures, they may be inconsistent with current knowledge of insect biology, specifically with identification problems associated with small sample sizes and inter- and intraspecific phenotypic variation in insects (Hook 1997; Samways 2007).

The Indian government is not alone in having such umbrella restrictions in place for insect collection. The U.S. Fish and Wildlife Service enacts similar restrictions and has sued several collectors over the removal of insect specimens without permits on protected lands (Hook 1997). Nevertheless, the difficulties in physically removing large percentages of individual insects from a population and the prodigious reproductive capacity of most insects mean that overcollection of insects is rarely a threat (Small 2007). Despite the lack of scientific studies specifically assessing the impact of collection on vulnerable species, the general sense is that collectors rarely, if ever, are the primary cause of insect extinctions (Hook 1997; Small 2007). Nevertheless, impacts of collection are not the main issue in this case.

Indian forest departments and their officials are generally supportive of researchers with the necessary authorizations. The Wildlife Protection Act requires a person wishing to enter a protected area for scientific research to have prior permission of the Chief Wildlife Warden. The Czechs did not have permission to enter Singalila National Park. In addition to their unauthorized entry, it is alleged that they were in possession of more than

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1500 specimens of butterflies, including the endangered *Delias sanaca,* at the time of their arrest (Gusai 2008).

It was the large number of specimens collected by Švácha and Kučera that attracted the attention of Indian authorities. Furthermore, not everyone is convinced that they were collecting insects for research alone. Isaac Kehimkar, of India's Bombay Natural History Society, said, "a researcher wouldn't need so many specimens, 15–20 would do" (Roy 2008). On the other hand, Max Barclay, a senior curator at the Natural History Museum in London, has called for the entomologists' release, stating that "these people are sincere, genuine entomologists, and the specimens that they have collected are of no commercial value" (Nature 2008).

Many in the scientific community, assuming Švácha and his associate had no commercial motives, believe their conviction for collecting the insect specimens is an example of excessive prosecutory zeal by the Indian authorities. Švácha was fined Rs 20,000 (US$415), and Kučera was sentenced to 3 years of imprisonment and fined Rs 60,000 (US$1,250). It is also the disparity in the sentences that has attracted criticism. The judgment took into account Švácha's reputation as an entomologist of international repute and his educational qualifications. In contrast Kučera was granted bail, but was ordered to stay in India until his appeal came up for hearing in the Appellate court. However, Kučera jumped the bail and fled from India in October 2008. As a result Švácha now also faces the refusal of future visas for any continuation of scientific research in India.

Conservation Laws and Benefit Sharing

Although the Czechs were arrested for violation of both the Indian Wildlife Protection Act and the Biological Diversity Act, it is their conviction under the latter that touches on larger issues critical to the intersection of conservation and scientific research. India and other developing countries are becoming increasingly wary of foreign research on indigenous biological resources. The extreme caution with which the Indian government views foreign researchers may be linked to a move for increased sovereignty over local resources. Patents on what many Indians consider traditional knowledge, granted to western researchers under the Trade-Related Aspects of Intellectual Property Rights (TRIPS) regimes of the World Trade Organization (WTO), have fueled national outrage. For instance, turmeric—a tropical herb commonly grown in India—has been traditionally used in India as a dye, a cooking ingredient, and as an antiseptic medicinal agent. In the mid 1990s, turmeric became the subject of a patent dispute with ramifications for international trade law. A U.S. patent on turmeric was awarded to the University of Mississippi Medical Center in 1995, specifically for the "use of turmeric in wound healing," that granted them the exclusive right to sell and distribute turmeric for this purpose (Slack 2005). The patent was challenged by India's Council of Scientific and Industrial Research, which questioned the novelty of the university's "discovery." Although the patent was revoked following investigations by the U.S. Patent Office, it stood for 2 years despite widespread evidence that the process was not novel and had been used traditionally in India for thousands of years. A similar dispute on the potential patenting of Basmati rice followed, leading to concerns in India as to the economic and socially damaging impacts of such legal "biopiracy" (Slack 2005).

The United Nations Convention on Biological Diversity (CBD), the principal legal instrument for protection of international biodiversity, establishes three objectives: conservation of biological diversity, sustainable use of its components, and fair and equitable sharing of the benefits arising from the use of genetic resources. The third objective, in particular, has raised concerns in developing countries such as India. Although Article 15 of the CBD affirms the sovereign authority of a country over its natural resources, it also stipulates that countries should facilitate use of their resources. This has been interpreted to mean that national resources should be available for research under a reasonable regulatory regime (Iles 2003). In addition Articles 15 and 16 of the convention grant the right of access by corporations and private individuals to biological resources for research (Kamer-Mbote & Cullet 1999).

The CBD is, however, only a framework agreement. It requires implementation by its specific parties to give effect to the provisions it lays out (Barrons & Couzens 2004). The Indian Biological Diversity Act is an outcome of this requirement of the CBD. The primary objective of the Indian Biological Diversity Act as embodied in its preamble is "sharing of benefits." The act is primarily defensive in its intent, enacted to prevent the biopiracy of India's natural resources. In particular the act empowers the Indian government to share in any profits that may accrue out of a patent acquired on products or processes from a biological resource of India.

The Czechs disregarded Section 3 of the Biological Diversity Act, which expressly requires a foreign citizen to seek prior approval of India's National Biodiversity Authority for collection of a biological resource for research or commercial utilization (Indian Biological Diversity Act 2002). Failure by the Czechs to obtain the necessary permits to enter into a protected area and collect insect specimens led to a legal presumption that they had commercial motives.

The conviction—the first under the Indian Biological Diversity Act—has laid the foundations of the boundary demarcating academic research and biopiracy. It has established law regulating the conditions under which science can secure equitable access to biological resources and share the benefits that arise from those resources. Paradoxically, breach of these laws by Švácha and Kučera may ultimately result in significant losses for science by

provoking additional barriers to scientific research and restricting access to resources. Nevertheless, the Indian government prosecuted a straightforward violation of its laws. These laws were established in accordance with international treaties to meet the conflicting demands of expanding Intellectual Property Rights regimes and the need to affirm sovereign authority over natural resources. This case needs to be widely advertised to scientists to increase awareness about biodiversity regulations worldwide. We hope the case will make scientists aware of the biological-collecting procedures in India and that such procedures may exist in other nations and that it will facilitate the increasingly difficult task of governments to promote conservation and the sustainable use of its biological resources.

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