

COMMENT

The mountains of Ecuador as a birth place of ecology and endangered landscape

In the era of space travel, ecology has continued to gain relevance as the science of the 'spaceship Earth'. In this context, it can be said to have a mission, which is to understand the complex network of the life-support systems that keep biospheric processes operating in a way suitable to sustaining living organisms and their environment (Odum & Sarmiento 1997). With the realization that ecology, in the broad sense, provides the means to understand the mechanics of nature, scholars are using ecological understanding at the interfaces of disciplines to: (1) prevent and reverse the demise of biodiversity in marine and terrestrial ecoregions (conservation biology), (2) reduce impacts of population pressure on the resource base of people (ecological anthropology), (3) establish more parsimonious economic activities to ensure optimum yields for the long term (ecological economics), (4) plan for an appropriately-equitable and socially-integrative sustainable development (environmental design), (5) restore degraded ecosystems and landscapes (restoration ecology), and (6) model hypothetical future scenarios where predictions from ecological theory may prove valuable for the future of mankind (environmental planning).

To comprehend the dynamics of this special body of technical knowledge, empirical evidence accumulated throughout the world has been summarized in recent books that cover the history of ecology (e.g. Woster 1985; Real & Leslie 1991; Hagen 1992; Golley 1993). However, the lack of recognition of the true origins of the discipline in China, Babylon, Egypt, Greece and Rome, entice parochialism with respect to the origin of ecology as a modern science. Moreover, lack of reference to the birth of ecology for the western world (Jordan 1981) puts tropical ecology at a particular disadvantage in historical accounts of ecological work. Restricting historical-ecological analyses to the British/USA context to such sources is notorious. Hence the shared view that ecology is a temperate-zone discipline.

The work of Alexander von Humboldt as the 'father of holistic ecology' should be realized from his magnum opus *Cosmos* (Sachs 1995). Also in this vein, there should be realization of the place that inspired such a monumental body of information; it is argued that the Andean landscapes of Ecuador are the cradle of Humboldt's work, and thus a putative 'birth-place of ecology' (Sarmiento 1995). Although what Humboldt saw was already an anthropogenic landscape, the striking diversity of resources, the abrupt microclimatic variation, and the cultural adaptation he found in the tropical Andes, were so compelling as to generate his vision of unity and harmony in the making of a 'landscape character' which had been shaped by climate and people.

Within the trend of omitting contributions made outside of the English-speaking world, as was already criticized by Naveh & Liebermann (1994) for the case of landscape ecology, there is the risk that the international conservation community also underestimate the importance of preserving Tropandean landscapes, as samples of the birth place of ecology.

The ever-growing interest in the conservation of lowland rain forests of Amazonia, or the tropical lowland rain forests of Chocó, west of the Andes, should not engender neglect of the study or conservation of the Andean piedmont as a whole, the montane forests and the highlands of the tropical Andes (Churchill *et al.* 1995), which are the site of Humboldt's original enlightenment. I make an appeal, therefore, for increased research and conservation efforts on Tropandean landscapes in general. Stimulating the work of the international conservation community will lead to recognition of the birth place of ecology, and hopefully generate more ecological study of these little-known cold tropical regions.

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FAUSTO O. SARMIENTO

Center for Latin American and Caribbean Studies

University of Georgia

Athens, GA 30602–1619

USA

Tel & Fax: +1 706 548 0089

email: fsarmien@uga.cc.uga.edu