

# Developing countries and dependent science

An interview with José Leite Lopes

*A theoretical scientist from Brazil gives voice to some plain-spoken thoughts on the influence of dependent development upon the status of science and technology in the southern portions of the Western Hemisphere.*

*What distinguishes the 'school of science' in Latin America from science elsewhere?*

There is no 'school of science' in Latin America, a region making up most of a hemisphere and whose countries have had their own, specific historical evolution. There is Argentina which reached a relatively high degree of economic and cultural development before the rest of the Latin American nations. By 1911 the German physicist, Richard Martin Gans, had founded a school of physics in La Plata. In Mexico, an important team of physicists was evolving in the Autonomous University with the pioneering work of Manoel Sandoval Vallarta; renowned mathematicians and physiologists also came from that country. In Brazil, research in biology and medicine followed from the fight (at the beginning of the century) against yellow fever and certain 'coffee diseases', such as the convulsion of Broca.

But systematic research in mathematics, physics and other branches of both natural and social sciences became possible only after the creation of schools of science and education. In Brazil, this followed the policy of industrialization and national development subsequent to the revolution of 1930. There, as in many other Latin American countries, one finds today talented

scientists and good institutes of science.

Having said this, I should add that there is much to distinguish research activities in Latin America from those in Europe and North America. In old, colonial times, science and autonomous culture had no place. The regions of Hispanic and Portuguese America were simply supposed to furnish raw materials and gold and silver to their metropolitan centres. In modern times, the development of science responds to the political and economic constraints based on North American and European patterns of growth. In this process of imitation, Latin American nations are integrated in the economic-cultural market of the industrially advanced nations—and this integration is achieved through a mechanism of dependence. So science necessarily reflects these limitations.

*Would you say that there have been cultural as well as economic hindrances, then, to the flowering of science in South and Central America?*

I have mentioned Latin America's economic and cultural dependence: all of us have been educated, from elementary school through university, along lines tending to admire and praise the advanced civilization of Europe, and now, the United States. Science has been presented as a universal but unique