

medicine, solid state physics, and food science and technology. An ample description of the activities of the CSIC is given in Reference.³³

A recent major addition to the research centres of the CSIC is the Centro Nacional de Biotecnología (CNB).

THE NATIONAL BIOTECHNOLOGY CENTRE (CNB)

In 1991 it was officially opened in Madrid as a dependent on the CSIC. The centre was conceived in 1984 and construction began in 1986. The CNB facilities exceeds 18,000 m² area, staffs more than 400 professionals and technical personnel, and it is associated with the Universidad Autónoma de Madrid. Total investment in this centre exceeds \$60 million. The design, construction, facilities and equipment are state of the art. CNB has three major lines of activity namely, a) cell and molecular biology with a strong emphasis in immunology, b) microbial biotechnology directed to its application in biopharmaceuticals, agriculture and the environment, and c) plant biotechnology, emphasizing genetic improvement and resistance to plant disease and environmental stress in plants. A board of trustees including representatives from the industry administer CNB. Several multinationals established in Spain plan to launch a series of products developed in collaboration with CNB. CNB which is most interested in establishing various areas of collaboration with Canadian firms and institutions, could develop important links with its sister organization in Canada the Biotechnology Research Institute of Montreal.

Other centres of CSIC involved in Biotechnology include the Centro de Biología Molecular (Madrid), Centro de Investigación y Desarrollo (Barcelona), Instituto de Investigaciones Biomédicas (Madrid), Instituto de Biología Vegetal and Fotosíntesis (Sevilla), Instituto de Farmacología y Toxicología (Madrid), Instituto de Microbiología (Salamanca).

D. SPANISH BIOTECHNOLOGY & THE EUROPEAN ECONOMIC COMMUNITY

A number of factors has hindered the development of Biotechnology in Europe. In the *first* place, the multiplicity of regulations and intellectual property laws. Then political considerations related to the subsidies for fermentation feedstock have made uneconomic the development of certain areas in biotechnology. On balance, the European Community (EC) lags behind the USA.

The III EC Framework Program (1991-1994) with a Cdn \$1.067 billion budget includes three major sub-programs dealing with Biotechnology.³⁴