always demanded. The writer was given a membership card for the Hotel Russel Erskine's "Rocket Club" along with his room key. One imbibes knowing that he is contributing to a good cause. "We have a joke here," says James Record, chairman of the county commissioners. "When you bend the elbow, you're doing it for art."

The liquor-tax money is piling up, and construction of the cultural center may start sometime next year. Once the center's doors are flung open and other objectives of the city's ambitious renewal plan are met, perhaps the downtown and its new cultural attractions will pull a few more people away from the motel, drinking-club, shopping-center culture found along Memorial Parkway.

In sum, Huntsville is moving on a broad front to try to capitalize on the fortunate circumstance that the Army and NASA have come with lots of jobs and federal dollars. In view of its beginnings and its problems, it is difficult to see how Huntsville could have done much more to make the most of its good luck.

—LUTHER J. CARTER

Technological Innovation: Panel Stresses Role of Small Firms

Efforts to force the federal government and the country as a whole to pay attention to the problems of civilian technology have met with relatively little success. For instance, in 1963, Congress decisively indicated that it was not interested in spending money for the Civilian Industrial Technology program proposed by the Administration and J. Herbert Hollomon, Assistant Secretary of Commerce for Science and Technology.

Hollomon has had to seek out other methods to focus attention on civilian technology. He has created and utilized a Commerce Technical Advisory Board, many of whose members are drawn from industry, as a source of scientific and technical advice independent of such traditional authorities as the President's Science Advisory Committee (PSAC). When asked about his relationship to PSAC in a recent interview with *Science*, Hollomon replied, "PSAC is concerned about the support of science; we are concerned about what you do to stimulate innovation in the private sector. . . . The people who use science are a different breed of cat than the scientists."

In the past few years, the Technical Advisory Board, which Hollomon heads, has created a group of panels to study important national problems in civilian technology. In 1965, the Board appointed a Panel of Invention and Innovation* which recently issued a report entitled "Technological Innovation: Its Environment and Management." Although discussion about technological change has long centered around the need to increase expenditure on research and development, the panel reports that it is unable to state that the nation is lacking in R & D investment for promoting innovation.

Rather, the panel concluded, there is need for much more attention to the social and business climate which creates the possibility for such change. The panel argued that R & D accounted for less than 10 percent of the total cost and effort of technological change, and that it was necessary to separate the idea of "invention" from that of "innovation"—the process by which an invention is injected into the economy. The group readily admitted that it lacked much of the information necessary to comment with complete accuracy on technological innovation but stated that this gap was in itself significant: "the lack of objective data, in or out of government on the innovation process in general and the technologically based firm in particular, is symptomatic of a very serious deficiency

*Robert A. Charpie, president of Union Carbide Electronics, served as chairman of the panel. The other members were: Lawrence S. Apsey, John F. Costelloe, John F. Dessauer, John McK. Fisher, Aaron J. Gellman, Peter C. Goldmark, Earl W. Kintner, Mark S. Massel, Richard S. Morse, Peter G. Peterson, Sidney I. Roberts, Dan Throop Smith, John C. Stedman, William R. Woodward. Daniel V. De Simone, director of the Office of Invention and Innovation in the National Bureau of Standards, served as executive secretary of the panel and wrote the report. The panel was composed of private citizens, most of whom were drawn from industry, academic life, and the legal profession.

The 83-page report can be obtained for $1.25 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

President Proposes Patent Reform

President Johnson recently sent to Congress the Patent Reform Act of 1967. If passed, the bill will mark the first significant changes in the patent law since 1836. The slowness and complexity of the patent system have often been criticized as impediments to U.S. technological progress. Although requesting many procedural changes, the President's bill does not deal with the controversial question of the ownership of patents resulting from government-sponsored research.

The Patent Reform Act of 1967 closely follows the recommendations of the President's Commission on the Patent System (which are described at some length in *Science*, 30 December 1966). The new patent legislation embodies most of the Commission's recommendations including adoption of a "first to file" system; giving patents a 20-year term after filing date; publication of patent applications within 2 years of filing; creation of a statutory advisory commission to provide continuing evaluation of the patent system; and presumption by the courts of Patent Office correctness in denying patent claims. The bill did not include the Commission's recommendation that patents no longer be given on ornamental designs and on certain types of asexually produced plants.