pulp and paper mills and for a wide range of secondary industries that convert the products of the basic industries into more highly manufactured goods such as veneers and plywoods, sash and doors, furniture, and a vast range of industries using wood in any form in their processes. These industries, especially the pulp and paper industry and the lumber industry, contribute substantially to the value of the export trade of Canada and thereby provide the exchange necessary to pay for a large share of the imports purchased from other countries, particularly the United States.

Technological changes and market shifts are causing Canada to lose some of the unique advantages it enjoys in the forest products field. In an effort to remain competitive, changes are being brought about in the structure of Canadian forest-based industries and in the technologies employed. Much emphasis is also being placed on better utilization of the forest resources.

In British Columbia there is a continuing development of the pulp and paper industry which, unlike that in Eastern Canada, is integrated to a high degree with the lumber industry. An important feature of this integration is the use of smaller and defective logs uneconomical for the manufacture of lumber, and the use of sawmill and veneer mill residue in the form of pulp chips. In Eastern Canada the most significant developments in the pulp and paper industry have been the increasing use of hardwood species for pulp manufacture and the increase of speeds in paper machines which has improved productive capacity at relatively low costs. There is also continuing construction of new plants, notably in the Maritime Provinces, and this is leading to improved utilization through the use of sawmill residues for pulping material.

Significant changes are also taking place in the lumber industry in Eastern Canada. Sawmills are undergoing a gradual process of concentration into larger and more efficient units and employing modern electric, hydraulic and pneumatic equipment which permits a high degree of mechanization and quality control. There is also a trend toward more complete integration through the acquisition of veneer and plywood mills and board plants. These factors are naturally leading to a higher degree of utilization which is exemplified by the conversion of sawmill residue for pulp chips.

The logging industry has been highly mechanized in Western Canada for a number of years and mechanization is now progressing rapidly in Eastern Canada, raising the output per man-day and leading to stabilization of employment in the woods. Ten years ago mechanical saws were just beginning to find general acceptance, but now they are found in all woods operations and the buck-saw is almost non-existent. Loading and transportation of logs and pulpwood is being done mechanically to an increasing extent with a consequent continuous reduction of the horse population in the woods. New and better logging machines are constantly being developed and experiments with pulpwood harvesting combines promise a high degree of mechanization in the woods wherever terrain conditions permit.

These and other changes are reflected in the following statistical data.

Subsection 1.—Woods Operations

In connection with operations in the woods, the forests provide not only the raw materials for the sawmills, pulp mills, veneer mills, charcoal, excelsior and other plants, but also the logs, pulpwood and bolts for export in the unmanufactured state, and fuel, poles, railway ties, posts and fence rails, mining timber, piling and other primary products that are finished in the woods ready for use or export. A number of minor forest products help swell the total, such as Christmas trees, cascara bark, balsam gum, resin, etc.

Estimates of woods operations attempt to give actual production figures for all items and are based partly on provincial forest service data for volume. Value, as currently estimated, excludes transportation costs.