By broad industry standards most units of the forest industries are small business. Only a few units, such as pulp and paper mills, constitute large business. By standards within the forest industries themselves, however, small business has a special meaning, which, so far as is known, no one has attempted to define. Probably the majority think of small business in terms of a portable circular sawmill as contrasted with a stationary band mill or perhaps a producer of green crating or turning squares in contrast to a manufacturer of kiln-dried dimension stock.

Either the amount of invested capital or the number of employees is a common criterion of size of a business. But for our present purposes it seems desirable to reduce this criterion to the extent of marketing area. Accordingly, it is proposed that we think of small business as that which serves a local market rather than a wide regional or national market. Many instances can be thought of which do not conform to this definition, but they do not invalidate the main point in mind. Incidentally, many of the exceptions are not independent units but subsidiaries of a controlling parent organization.

As high quality timber and preferred species become less plentiful in all localities and as advancement is made in the technology of processing and making big ones out of little ones, manufacture for local markets from local material has a better chance of successfully competing with shipments from distant sources. The producers of forest products who supply the national market pay from $10 to $25 per M in the case of lumber for transportation from mill to market. A manufactured product sold locally escapes such burdensome transportation charges and also the sales cost inherent in wide distribution. The ever-increasing cost of transportation is a sizeable item that small business, or local-mills-for-local markets, can count on to offset the greater production efficiencies that frequently attend large scale manufacture. In view of the foregoing it is apparent that more attention should be directed in forest research to helping make the adjustments in forest products manufacture and distribution that will enable producers to serve and cater more to local markets. If research programs do not reflect that need, they should be revamped accordingly.

2 Maintained at Madison 5, Wis., in cooperation with the University of Wisconsin.
True, much of the small forest products business at present is too inefficient and too productive of low quality products to stand up well in modern competition. This applies in various lines of production, such as building materials, container stock, turning, and factory dimension. Many practical men in contact with the rank and file of operators have formed the habit of thinking in terms of products that can be produced with practically no investment; in other words, what can be done on a shoestring. That habit has some good aspects but also several very bad ones. On the other hand, forest products research should not be directed solely to developments and techniques that can be applied only with large outlays of money. One of the needs in forest products research is to strike a proper balance -- to lift the horizon of the practical man and pull the research technician down to earth.

More and more benefits of forest products research should reach the small units. What are the chances that research can bring into existence modern business enterprises which are geared closely to local timber and local markets?

It may help clarify this point to refer here to a war research accomplishment, although not directly connected with forest products, recently announced by the University of Wisconsin. The university chemists appear to be well along toward developing a new method of fixing nitrogen from the air for fertilizer purposes whereby relatively small gas furnaces can produce as efficiently and economically as the large scale high investment, electric–arc plants previously thought necessary. It is worth our considering this accomplishment even though in another field in order to emphasize to ourselves that efficiencies in forest products utilization are not always dependent on the largest investments. Radical improvements can be developed for small unit producers if we do not give up before we start and if we have the resourcefulness and courage to think in terms, where necessary, of radical departures from time–honored practices.

Perhaps you will accept this viewpoint fairly readily on the assumption that it refers primarily to improving small sawmills and encouraging the making of rough and ready products, like turning squares, industrial blocking, and the like which small sawmills are producing more and more in lieu of rough lumber only. This angle should by no means be minimized. However, I am here concerned principally with a less conventional setup and one for which there is not much of a counterpart at present. It is concerned with the gradual introduction of a type of small plant that is equipped to take advantage of the good features of the newer forms of products for housing, farm building and equipment, packaging, and the like. It is not so much a volume producer of rough products as it is a quality producer of finished or semi–finished products. It utilizes wood in the solid natural form to a considerable extent, but also may make use of veneer and plywood, or laminating and prefabrication. The plan of operation is likely to involve treating for decay and perhaps fire resistance. The plant can hardly include any pulping or chemical utilization processes, but its wastes are converted to chips, fiber, or flour for shipment to such a mill. Clearly
it is not a single product business but one of some diversification to supply a reasonable range of the wood products that are used in the community in which the plant is located and to which its local species can most readily be adapted. Diversification of product means the integration of production, which is the desired key to better utilization and better forest management.

Admittedly this specification of small forest industry is in too general terms to mean anything more than a starting point for discussion. If time permitted it might be treated in more definite terms. However, many of the questions that could be raised cannot be adequately answered at present, otherwise the subject would be of little importance at a research conference of this kind.

Within certain limits this type of small forest products business is widely applicable. The conditions and requirements, however, will vary widely as between States according to the prevailing type of agriculture, industry, and general living conditions to be found. What will apply to one State will not apply fully to another. Wood products for modern housing and farm buildings are a mainstay in all States, but vary some with the locality. Agricultural containers vary according to the region from fruit to vegetable and from cheese to meat and eggs. Similarly, finished wood parts for urban industrial consumption vary over a wide range of items which in turn vary also as between States. Such a scheme of operation, of course, will not be universally applicable, will not preclude present types of small business feeding into a national market. Also it will not meet the requirements of utilization for large holdings in isolated regions of the country. However, with respect to the latter it should not be overlooked that in many instances it is the localities close to major bodies of timberland that are the rapid growing farm communities. It is the growing farm communities which comprise the largest market for wood products the world around, a condition which has always applied in the past and which will probably apply more and more as time goes on.

One arrives at deductions fairly close to those outlined above by recalling such recognized facts as follow:

(1) With the cutting out of the large mills many sawmills in the South have found it more and more advantageous to sell their product close at home, often at retail.

(2) A leading West Coast shipper points out that a much larger proportion of the Douglas-fir cut will be consumed on the West Coast than was the case prior to the war.

(3) More fabrication at the point of production is the course which many lumbermen prescribe for themselves.

(4) Retailers and technical men point out that buyers of houses and of farm buildings are becoming more interested in the finished product than in the raw material which goes into it.
(5) Fabricated building products take higher freight rates than do raw materials and usually are more bulky. If they are to be supplied in place of raw material they have to be assembled relatively close to points of use,

(6) Many retail lumber yards have started to prefabricate farm structures and equipment, and the trend seems to be developing rapidly.

Hence it seems to be recognizing and conforming to the trend of the times to plan forest products research in support of local manufacture for local use.

Much research still has to be done to give direct support to the development here referred to. Some of it is basic in the sense that it is applicable to all regions, for example, further development of the small dry kiln, further simplification in laminating and prefabricating methods, and further improvement in use of wood as fuel. Much of it is regional or state-wide in the sense that specific and local adaptations of general principles are needed with respect to better methods of processing, better form of products, and better equipment for use with qualities of wood locally available. Pilot plant tests to determine costs and demonstrate methods will be important factors. Although there will be a similarity between States, the conditions vary so much among States that several different research programs can be undertaken without much overlapping of one with another.

If research work to this end were to be undertaken in various States according to the needs of local conditions, it should greatly hasten the day of more stable and permanent forest industry. It might sacrifice a little of the glamour that goes with discovering a new plastic, for example, but it should have a public appeal and be of great public benefit.