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Wood Technologists* in Industry

HERBERT B. McKEAN

Employment In Private Industry

THE vast majority of forestry college graduates, majoring in wood utilization subjects, seek their livelihood in or through employment with private industry. There are many reasons why these men will always feel that they chose wisely in selecting that branch of forestry. Men of ability will unquestionably derive the greatest possible income in private industry. The opportunities of exercising initiative are unexcelled. Their work will almost invariably be stimulating, requiring maximum diligence and ingenuity.

Private industry offers opportunity to be of public service—an ideal generally in the mind of any student electing to study forestry. Many foresters become State or Federal employees because of the opportunities of serving the public. Private industry also presents possibilities. In fact the lumber industry provides an excellent example of an industry that has been of real benefit to the general public. In the earliest days of settlement of this country it was necessary to burn woodlands in order to provide fields for cultivation of food crops. As soon as the lumber industry got started, however, the clearing of fields was accomplished for the early settlers and in addition to the lumber industry provided these settlers and farmers with materials to build their buildings, fences and other necessary structures of equipment. It is easy to forget how important the lumber industry also is in providing town and city folk with their residences, places of work, furniture and a great many other articles used daily. Such items have been provided to the public for many years on a very economical basis. Certainly the production of these materials is a service to the people of the nation. Now with apparently plenty of agricultural land cleared of forests the lumber industry, as well as other forest products industries, which draw directly on the forest for their raw material, are more and more tending to become stabilized and handle their forest land on the basis of continuous wood production. Assist-

* The term "wood Technologists" here is used to refer to graduates of forestry schools majoring in departments specializing in manufacture of forest products, wood utilization or wood technology.
Fig. 1—Application of technology has developed hardened desk legs. “A” displays the raw materials. “B” shows a pair of legs for either side of a desk knee hole. “C” is a mold in which the wood is compressed. “D” is a veneered leg and “E” is a solid hardened leg.

Fig. 2—Production of bowling pins is an important forest products industry. Items “A”-“C” are tenpin blocks and finished products. “D” is a billet from which two duck pins such as ‘E” will be turned. “F” and “G” are suggested methods of improving the hardness at the maximum diameter of the pin.
ing such organizations to handle their forests better and use their wood more wisely, certainly offers splendid opportunity for those public spirited forestry graduates who feel that promoting the national welfare must be a part of their vocation.

Sales

Sales offers the best possibility for large income to the wood utilization major. This might be the sale of lumber; might be the sale of pulp and paper; it certainly includes furniture, treated poles, ties, sporting goods, plywood and many other wood items. The responsibilities and methods of a salesman do not need to be discussed here. Some comments, however, on what the budding young salesman might expect immediately upon graduation may prove to be worthwhile.

The first thing the recent graduate will encounter is that he needs additional training. If he is hired to become a salesman he will, doubtless, be given some training in many of the other departments of the organization employing him. Certainly he must know the products and the method of production used by his employer. One of the early steps in this training, therefore, probably will be a period in the operating plant. There may be a session in the office to study necessary routine there. Sooner or later there will be a period of selling under the tutelage of an experienced salesman. Finally the new salesman will be on his own, selling lumber or furniture, pulp or whatever the wood product of his employer might be.

The length of such training is going to be governed by a number of factors, including the policy of the employer, the economic situation at the time, available manpower and other matters. The period may be less than two months or may extend to two years or more. Ultimately, however, those men properly trained and with an enthusiasm for, and interest in selling will soon find themselves in the upper income bracket of technically trained men.

Production

It is probably true that relatively few forestry graduates have given much consideration to becoming salesmen. Most of them are inclined towards the technical aspects of plant operation. Most of them, therefore, will look for and find jobs directly related to the production of the end products of the firms in which they are employed.

Very frequently the undergraduate faced with the problem of finding employment upon graduation is much more concerned with the problems of finding employment than trying to determine what field of forest products holds the most interest for him. Perhaps this is justified, because of the rather broad
interests normally covered in forestry school training. There is, however, one point which appears worth considering. In general, the attitude appears to be that employment with large organizations offers more opportunity than with small organizations. This may actually be true, for the superior technician. The average man, on the other hand, may find that his opportunities are better in a smaller company where competition is much less severe. Assuming then that there are advantages in a small organization, the forestry student or the wood technology graduate is at a distinct advantage over graduates of other types of technical colleges seeking employment in other industries. The forest products industries are typically small operations. There are a few big lumber manufacturers, a few large furniture manufacturers and most all pulp and paper manufacturers are large concerns. The majority of the forest products dollar value, however, is produced by medium to small sized concerns. Practically all of these smaller organizations would benefit by the services of a wide awake and intelligent wood technologist. Obviously, if such a man in a small company proves himself to be of value he will soon work himself into a position of importance whereas it may take many years to reach an equally important position in a large firm.

Some of the fields which are all too often overlooked by the undergraduate, but which contain many of the profitable, small industries, include lumber manufacture, plywood manufacture, furniture production, manufacture of hardwood dimension stock, flooring, sporting goods, treating plants, crosstie production, production of poles and piling, container manufacture and many other producers of wood products.

One of the easiest places for a technical man to become established in a woodworking concern is to start as a dry kiln operator. No college man should set dry kiln operating as his goal. However, it is an excellent place to become generally familiar with the entire operation on which he is working. From there one step that could be well taken in most all plants would be the regulation of the moisture content of the lumber throughout the entire production rather than merely in the dry kiln.

In general, such moisture control systems* have not been adopted by management in wood products manufacture. If the technical man, after becoming familiar with the operations, can convince management of the advantages of the moisture control

* "System" refers to bringing the wood to proper moisture content and holding it there by practical available means. This does not necessarily refer to humidifying all or part of the plant.

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system, such a man will immediately be placed in a very important position in the plant's operation. In fact, the man who is in charge of the moisture control of the wood from the time it arrives until the time it leaves the plant has a better opportunity to become familiar with the over-all operation than perhaps any other person in the plant. Consequently, from such position the technologist is in direct line for promotion to position of even greater responsibility. The man who is put in charge of controlling the moisture in the wood, is in an excellent situation not only to benefit the entire operation but also to prove to management that he has the ability management needs for the responsible positions, which is essentially the application of scientific knowledge to production.

Technical control is one step further than moisture control. Very often wood products operations are run without regard to recent discovery and development in the field. Bringing his knowledge to such a firm, the forestry graduate can improve the products, reduce waste and lower costs. A few activities in this category include stain prevention, proper storage, complete moisture checking and control, quality tests on all products used in manufacture. Of course the list is much longer and many of the applications of technical control must be discovered and developed in each plant. Here is an opportunity great enough to challenge any technical person.

Many graduates make their start in woodworking factories as a laborer, perhaps unloading cars of lumber, perhaps loading cars in which the product is shipped, perhaps offbearing at edgers or resaws. It really doesn't matter much what the initial position is, an intelligent man is going to learn about the operation wherever he is located. One of the more profitable starting jobs in the sawmill is an offbearer on the green chain. This is one of the best places to learn lumber grading. The offbearer at the head saw and at the edger of a sawmill is in an excellent position to learn a good deal about the manufacture of lumber. The lowly timekeeper at a flooring mill or furniture plant or other woodworking factories has a fine chance to learn the reasons for many methods of operation. From any of these humble jobs, the intelligent man can progress to positions of importance in the company and of gratification to himself.

The technologist should always be looking for ways to improve the operation. Too often, however, the new man in a factory may get what he considers to be a brilliant idea, run to management immediately only to find there are some very good reasons why such a proposal could not be used in the plant.

*Nineteen Forty-eight*
Therefore, these ideas should be well considered before being presented. Consult the workers, get their opinions. If, ultimately, the proposal seems to be sound, assemble facts and figures to prove the idea and then present it to management with the data to show why and how it will provide an improvement.

It is much easier to describe where a technical man must start in the production department than it is to say where he will end or what his opportunities may be. So much depends upon the individual. Every woodworking plant needs a wood technologist. Many people in management are not yet aware of the benefits which wood specialists can provide an operation. It is, first, a matter of selling such management on the technologist's value and then the technologist proving his worth. The jobs which are available are legion. From the lowly beginning, technologists who apply themselves can work to positions of managers of departments within a production unit. They can advance to production managers of an entire factory. There are examples of forestry graduates advancing to the position of general manager of entire companies. The opportunities are there, energy and ability are the means of reaching the end.

The very few, specific jobs mentioned are by no means the extent of the initial opportunities available to the young college graduate. There are many jobs in the woods requiring special training, such as provided in some courses in wood utilization. There are many office jobs in woodworking factories where a knowledge of wood is of real assistance. The opportunities in production, using the term generally, are just as great in the forest products industries or perhaps greater than in any other industry in the country.

Research

Research is a field of wide horizons in the forest products industry. A majority of firms are just beginning to become research conscious. Thus expansion of old and erection of new laboratories is to be expected, with consequent demand for men. Another fascination of research is the satisfaction derived through seeing one's own brain child develop in the laboratory and then pass into commercial production as a new product of real benefit to its users.

One of the best training methods in universities is to conduct laboratories in which certain types of research are undertaken by the students. As a result of this contact with research, many students develop the opinion that they would like to enter this type of activity as their life work. Before embarking into industrial research, however, these young technologists should be sure
Fig. 3—There has been interest developed recently in impregnating wood with metal. This apparatus is in use at the Timber Engineering Company Laboratory for treating wood with metal.
to recognize what industry expects of its research. The main job is to develop new products and processes and to improve present products and processes, and through such developments constitute an important income producing department of the firm. Discovering and inventing new ideas require ingenuity, ability to see what is needed and talent to provide a material or process for the need. Mere testing machine operators have little future in any type of research. Men with ideas, and ability to develop them, on the other hand, can expect early recognition through advances in salary and position in the field of industrial wood research.

**Small Industry Ownership**

In writing an article such as this one it is difficult to refrain from “preaching.” Somewhat in that vein, the idea of ownership should be emphasized to college graduates. For real satisfaction and also for the largest incomes, ownership of the operation presents the greatest possibilities to the wood utilization graduate. About 99 per cent or more of all college graduates, including foresters, think in terms of working for somebody else during the whole of their natural life. It takes greater confidence in one’s own ability to run one’s own plant. The opportunities, however, for owning and developing a small industry are good and this is especially true in the woodworking industries where plants are characteristically small, requiring relatively small capital.

Example after example can be cited where men have obtained the necessary experience and then embarked on their own operation. One example of the types of businesses than can be established in the buying and selling of such wood products as poles, posts, crossties, pulpwood and logs. These products provide a quick turnover and a relatively small capital investment is needed for the operation. Actually, the entrepreneur here is primarily a commission salesman. Going a little further, the small sawmills, the small wood turning plants, small dimension plants, all offer excellent opportunity to become one’s own boss.

The average wood technology graduate knows nothing of finance or how he can establish himself in a small going concern. These days, on the other hand, G. I.’s. are in the fortunate position of having Government backing for setting up small plants. There are other sources of income, such as banks and insurance companies, to which small businesses can turn for financing. With the accumulation of capital, credit and business experience a competent technologist has almost limitless opportunities to own and operate wood working plants.

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