

Colony Brooder Houses

For several years the Minnesota Experiment Station has been successful in raising turkeys in colony brooder houses. The station's plan of soil sanitation is one of rotation rather than the use of a sand or gravel yard. A temporary fence is used to inclose a small area near one corner of the brooder house. At the end of from five to seven days the fence is moved so that the range at another corner is utilized. When all four areas have been used the brooder house is moved to fresh, uncontaminated soil. The frequent moving of the range and keeping the poults off the ground, once it has been used, breaks up the life cycle of the worm egg and helps to keep the intestinal tract free from parasites.

One very often hears the expression, "We do not have any luck with turkeys," but in the light of recent findings the words "proper sanitation" should be substituted for "luck." By starting the poults in clean quarters and ranging them on soil on which neither chickens nor turkeys have been reared the previous year, the average grower can be reasonably sure of success if he follows proper artificial incubation and brooding practices.

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TURPENTINE Distilling Although in France steam plants by New Steam Still have been used extensively for the separation of crude turpentine gum into spirits of turpentine and rosin, Has Many Advantages in the United States a large copper kettle and condensing worm are still used. The kettle is heated by a wood fire, and removal of the volatile constituents is facilitated by the admission of a small stream of water into the still during distillation. The flow of water must be such that a steady boiling of the turpentine from the gum with a gradual rise in temperature is maintained without flooding the still, in order to secure the lightest colored, that is, the highest grade of rosin which the gum will yield. Thermometers of both the mercurial and recording types are used to keep the distillation under control, but even with this and other modern improvements for controlling the process it is easy to make a mistake and scorch or degrade the rosin. Because distillation by steam is considered more nearly "fool-proof" and produces a uniform high-grade rosin under almost any condition of operation, the Bureau of Chemistry and Soils made a study of steam stills.

Several steam stills have been made in the United States during the last few years, but all of them are of the types used in France, which require the removal of the coarser foreign matter, such as chips, bark, and needles, from the gum before distillation. Steam stills have not operated with entire satisfaction on American gum, because the gum obtained in the United States contains more foreign matter and is more difficult to handle than that obtained in France. As these steam plants are expensive and permanent, their general use in the United States is restricted. They are better adapted to the larger centralized plants than to the smaller operations in the woods, where the site of the plant is usually changed every few years.

The Bureau of Chemistry and Soils sought to perfect a steam still which would be well adapted to American methods of operation, and

in which the crude gum could be handled without preheating and cleaning as simply as in the old fire still. It is, however, recognized that precleaning of the gum is necessary to get the highest grade of rosin obtainable.

Satisfactory Steam Still Designed

In the spring of 1927 the United States Department of Agriculture with the cooperation of a turpentine operator designed and installed a steam still that would utilize to the greatest extent the present fire-still equipment. It operated satisfactorily. This steam still is so designed that a fire still can be converted readily into a steam still by changing the bottom and placing steam coils and a steam jet of special design in the interior. This still discharges in the same manner as the fire still. It has the same tail pipe and gate. Consequently the same method of straining rosin with wire screens and cotton batting is used. It is charged like the fire still, and the coils are so arranged that the charge can readily be skimmed when desired.



FIG. 271.—Plant in Mississippi using for turpentine distillation a steam still designed by the United States Department of Agriculture

The same "cap" is employed for the discharge of the vapors. The condenser worm can also be used, but as the steam still operates more rapidly than the fire still a larger condenser is desirable. A boiler to provide the necessary steam is the only additional equipment required. This still is entirely suitable for handling cleaned gum.

Distillation by steam has many advantages over distillation by fire. It is less subject to damage from neglect and mistakes. It is difficult to degrade the rosin by faulty methods of stilling. The operator is sure to make the highest grade of rosin that the crude gum will produce. In a series of special tests the steam still produced rosin that averaged about one grade better than that made with a fire still. The distillation is practically automatic. Perfect temperature-time charts are formed with but little attention on the part of the distiller. Less labor and, for rapid distillation, less fuel are required. As it is possible to burn almost any kind of fuel under the boiler, cheaper grades of wood can be used than with the fire still. The fire hazard is greatly reduced, and since the boiler is

separate from the still shed the equipment can be kept cleaner than at the fire still. The boiler of the steam still can be used also to run a pump, saw, and other machinery without material additional expense for fuel. In a plant where several fire stills are operated the steam still offers a further advantage in the centralized means of firing provided by the boiler.

Wider Use of New Method Probable

It is believed that this type of steam still has sufficient advantages to warrant installation by operators working 20 crops or more. Although this steam still has been in use but one season, a number of operators throughout the naval stores belt are planning to adopt steam plants as a result of its satisfactory operation.

Specifications and blue prints of the design of the steam still have been prepared and placed in the hands of the turpentine-still builders. They can be obtained also from the Bureau of Chemistry and Soils, United States Department of Agriculture.



FIG. 272.—Model of the steam turpentine still designed by the United States Department of Agriculture

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VACATION Camps Give Rest and Instruction to Many Farm Women. Farm women to-day do not want to be patronized, but sometimes they long for encouragement and sympathetic understanding in their great variety of duties and tasks. In such moments it is to the county home-demonstration agents they often turn for counsel and guidance in making seemingly impossible desires and dreams come true. Such confidential remarks as that they had not been away overnight from the farm or ranch in seven or eight years, and that the monotony of hard work preyed upon their minds, set resourceful extension agents to thinking as to how a vacation could be made possible for them. Inquiry proved that a large number of women needed and wanted a change, even though it were only for a few days.