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JUST a little more than two years ago the *Review* carried an article dealing with the agricultural and industrial possibilities that ramie production might hold for the South. The difference between the ramie industry as it was at that time and as it is now is simply that two years ago it was still in the experimental stage whereas now it is in the developmental stage. The contrast is important. In the experimental stage of an industry there is a search for the technically feasible methods and processes that will best achieve its objectives. After these methods and processes have been worked out as general principles the developmental stage begins. It consists of an elaboration and improvement of detail that will make them economically feasible.

It was explained to begin with in the earlier article that ramie belongs to the hemp family and grows as a weed in tropical and subtropical climates in many parts of the world. Its stalk can reach a height of 10 feet and a diameter of three fourths of an inch. The ramie plant is a perennial growing from root segments and maturing in from 60 to 70 days. Under favorable circumstances it yields three or four cuttings a year with little cultivation.

Although ramie will grow to some extent in almost any soil, it does best in well-drained muck or alluvium that is medium acid, or a pH of between 5 and 6. There must be well-distributed rainfall of about 40 inches and plenty of sunshine for it to do its best.

Since frost and too much water will kill ramie roots, planting should not be attempted in places where frost penetrates into the ground more than two or three inches nor where water may stand on it for as long as 48 hours. Aside from having these weaknesses, ramie is hardy and is apparently subject to no seriously damaging insect pests or diseases.

Interest in the plant focuses chiefly on the long white fibers that lie embedded in gums just beneath the thin outer bark. The fiber has been known and used for more than 6,000 years, but it still plays a negligible role in the world's markets. In a way, therefore, ramie is both man's oldest and his newest natural fiber.

The rarity with which products made of this material are found on the shelves of merchants, however, does not come from a lack of interest. For almost a century ramie has been of intense interest in many countries, even to the point of obsession among some enthusiasts. This interest is aroused by the peculiar combination of physical properties that the fiber has. When properly processed, this fiber is long and lustrously white. It is several times stronger than cotton, stronger in fact than any other fiber known. When wet it is from 30 to 60 percent stronger than it is when dry; it does

not shrink, and it strongly resists rot as well as the ravages of sea water. Though it is highly absorbent ramie fiber dries quickly. It is light in weight. Moreover, it can be spun and woven into fabrics that are as coarse as heavy canvas or as sheer as the filmiest silk. Little imagination is needed to foresee a very large and diversified demand for such a product.

Because of its special characteristics the little ramie that was obtainable in the United States during the war was put to use in stern-tube packing on ocean-going vessels. Mainly because of its strength, in Canada and Great Britain it was used also for parachute harness. As more of it becomes available ramie will probably find its way into market after market that will be determined by one or more of the fiber's particular qualities. Marine cordage, because of ramie's nonshrinking property, is an obvious example. Fish lines and nets in which unusual tensile strength is important are another. There are, it is said, a million or more lobster pots scattered up and down the Atlantic coast. Their anchor lines and trap entrances could be made advantageously of ramie because of its strength and its resistance to the effects of sea water. Fabrics that receive hard usage, such as automobile and furniture upholstery, carpets, and rugs, are other potential products. Then, too, there is the whole field of wearing apparel, where ramie can find a market in such unmixed materials as those in which Sea Island Mills, Inc., has pioneered in this country, in such fabrics of mixed ramie and rayon as those being developed by the American Viscose Company, or in fabrics that are mixtures of ramie with wool, silk, cotton, or linen. In mixed fabrics ramie helps overcome some of the inherent weaknesses of the other fibers with which it is used. Thus ramie need not supplant other fibers but, by making possible the manufacture of superior products, might increase their utility.

There is a large potential demand for ramie not only in the domestic market but also in the foreign market, especially in Europe, where ramie products have been made for many years from fiber imported from China and other Oriental countries. Since sometime in the 1860's the P. A. Favier Company at Entraignes, France, has been making ramie products—damasks, art linens, and silk substitutes. In the years just before World War I France imported ramie fiber from China at a rate of about three million pounds a year.

During that same period the First German Ramie Company, with mills at Emmendingen, was manufacturing considerable quantities of cloth that was coarser than the fabrics in which the French mills were specializing. Little was known regarding this company's activities because it was

under close government control and its entire output was consumed within the country. At one time it employed 3,000 persons in its mills for the production of ramie yarn. Just prior to the outbreak of World War II it had completed plans to set up in China a highly mechanized industry for the production of China grass similar to the larger activities now under way in Florida. The company officials believed that, by so doing, they would solve the problems of an uncertain raw-material supply that had always harassed the proper development of the industry.

Across the channel in England the Yorkshire mills were making a large variety of ramie products. In Switzerland also there were textile mills specializing in the manufacture of ramie fabrics.

These foreign markets probably will be open to American producers in the future. According to reports, one Florida producer has already exported about 250,000 pounds of undegummed fiber to Switzerland. Another also has received orders from Switzerland and from Italy amounting to almost 45 tons a month. In addition commercial shipments have been made to Anciens Etablissements Duparquet Freres et Cie near Lyons, France, the oldest and largest of the French ramie companies.

One of the outstanding developments of the past two years has been the growing interest in ramie on the part of both domestic and foreign textile manufacturers. Producers say there is a market for all that is now being turned out and all that can be turned out in the immediate future.

The expansion of the ramie industry now, as in the past, is limited by the conditions of supply. The trouble has not been in the growing, for ramie, it has been demonstrated, is easily grown in many places where the soil and the climate are right. Substantial plantings in the Everglades and in Orange County, Florida, and smaller acreages in Alabama, Louisiana, Mississippi, Texas, and, more recently, in California have proved that ramie can be grown by the United States in competition with foreign countries.

In increasing the supply of ramie the chief difficulty has been in the separation of the fiber from the woody part of the stalk and from the bark. Another, but somewhat lesser, difficulty has been in the removal of gums from the fiber, which if allowed to remain set up fermentation and may thus injure the fiber.

In China and other parts of the Orient, which for years have been the chief sources of supply, the extraction of the fibers, a process known as decortication, as well as the degumming have been accomplished by hand methods. The ramie stalks have been beaten over sharp stones, washed, and scraped, all by hand, and then allowed to dry in the sun. The resulting fiber has either been used by the families that processed it or sold to itinerant buyers, who have sold it, in turn, to domestic mills or exported it. By such primitive methods the Orient has produced as much as 250 million pounds of ramie fiber a year, most of it being consumed in the countries of origin. Before World War II, however, a large part of the ramie produced in China and the Philippines was going to Japanese ramie mills. In those years also some, of course, was going to European countries.

Obviously the supply of ramie produced under primitive Oriental conditions was bound to be greatly variable in quality and erratic in quantity. No industry can thrive, regardless of the size of its market, unless it is assured of raw materials that are fairly uniform in quality and

available in dependable quantities at prices comparable to those of competitive raw materials.

Nevertheless small quantities of ramie have been imported into the United States for the use of manufacturers who prized its peculiar qualities. Since 1935 these imports of unmanufactured ramie, which come into the United States duty-free, have ranged from none to as much, in 1941, as 373 long tons a year. Of course the war interfered with the importation of ramie as it did with that of other Oriental products. The year before last imports amounted to 35 long tons, last year to 98 tons, and the first four months of this year to 97 tons. If the same rate of importation is maintained throughout the rest of this year, the total may reach something like 290 tons. Most of the ramie brought into the United States has come from China and the Philippines, although scattered quantities have come also from British Malaya, from Brazil, from Haiti, and from Cuba.

Figures like these are negligible, however, compared with those for other textile fibers. It is clear that textile manufacturers and other potential producers of ramie products could hardly have been interested in a raw material supplied under conditions so uncertain. Ramie would never find its way into the hands of ultimate consumers in this country until an integrated and stable industry was created in the United States itself. Only then could manufacturers be assured of a steady supply of good-quality fiber produced at a cost competitive with that of other fibers. Before such an industry could develop, however, large acreages of ramie would have to be planted and the whole process of harvesting, decortication, and degumming mechanized.

By 1945 there were only the beginnings of such a development. In Florida something like 1,600 acres had been planted by various individuals and firms, though larger acreages had been set aside for future planting. The United States Sugar Corporation at Clewiston in the Everglades had furnished approximately 1,200 acres of land to Newport Industries, Inc., of Pensacola, on which Newport Industries was to grow ramie on the acreage and eventually set up a decorticating plant. At Zellwood, in Orange County, Dr. Brown Landone of Winter Park had planted a couple of hundred acres and was experimenting with the agronomy of ramie culture. The state itself had planted four or five hundred acres at its prison farm at Belle Glade. Just outside Moore Haven the Sea Island Mills, Inc., of New York had a small acreage, about 180. The Florida Ramie Products Corporation had purchased 5,000 acres near Belle Glade to be planted eventually. On the state prison farm at Atmore, Alabama, a couple of hundred acres were planted in ramie, a development that was the work of Newport Industries before its operations were transferred to Florida. In addition to these there were a few scattered plantings.

Inventors were at that time still wrestling with the decortication problem. In the course of almost a century thousands of patents for decorticating machines had been taken out, but none of them had proved to be commercially feasible. The Corona, a large machine manufactured by the Krupp Works at Essen, Germany, for the decortication of sisal gave promise of success with ramie when it was tried with that fiber in Haiti. A small portable, hand-fed machine invented by P. A. Favier in France about 1895 and copied by the Japanese was being used fairly successfully by them with cheap labor in the Philippines. In the United States

a half dozen or so machines, some of them embodying principles similar to those of the Krupp machine and others the principles of the Japanese machine, were being experimented with. None of them, however, despite the claims of its inventor, was capable of producing a commercial supply at a reasonable cost. Thus the picture presented by the ramie industry in 1945 was one of experimentation that had achieved success in the growing of ramie but little in its economical processing.

In the Everglades

A survey shows that the industry has progressed substantially in the past two years. In Florida alone twice as many acres have been planted, and more are being prepared for planting. Successful decorticating machines are enabling a number of concerns to make commercial shipments. There is available no information about whether the ramie now being shipped is being produced profitably. It seems, however, that in some cases it may be profitably produced and in other cases it may not. The number of firms producing ramie has also increased. In all respects the industry as a whole appears to be moving gradually but certainly toward success.

Of the concerns operating in the Everglades, probably the oldest and most important is Newport Industries, at Canal Point. This firm has ramie growing on the 1,200 acres of land furnished by the United States Sugar Corporation. Its plant houses a large decorticator that is a greatly modified version of the Krupp machine. The decorticator, which has a capacity of about 1,200 pounds of dry fiber an hour, recently has been working two shifts a day. After the leaves and nonfibrous parts of the ramie plants are dehydrated they are ground into meal for cattle feed, which is then bagged. At present the entire output is being sold. Although the company has no degumming plant yet, it is experimenting with degumming. Since the demand for ramie is more and more for degummed fiber, the company will no doubt add degumming to the other processes when the time seems ripe. Although it maintains that its ramie operations are only a large-scale experiment, and no more should be claimed for the company than it claims for itself, the magnitude of its operations and the degree of mechanization employed from harvesting on through to the production of fiber make it appear that this concern has reached the point of profitable operation, or is at least close to it.

Another company that seems to hold promise of success is the Florida Ramie Products Corporation, which now has a plant at Belle Glade. Although it has the 5,000 acres for future planting, the firm at present grows no ramie. It has contracts with the state prison farm and with four or five other farms for about 1,000 acres of ramie. Ramie roots are planted mechanically, and the crops are mechanically harvested by John Deere hemp harvesters and International Harvester binders. From the field the ramie stalks are carried to the plant, where they are decorticated green. The decorticator was developed from a hemp machine but now embodies completely new principles. Though in many decorticating machines the ramie fiber is separated from the stalks by passing the stalks between a revolving knife and a steel backplate, with a very small clearance between them, the engineers of the Florida Ramie Products Corporation have found that the substitution of a flexible edge for the knife produces a wiping, instead of a scraping, effect with

less injury to the fiber and less wear on the knife blade.

On arriving at the decorticating plant each hauling unit, carrying four slings of about one and a half tons, is unloaded mechanically and the bundles are placed by hand on an inclined elevator-conveyor. The conveyor carries the bundles past a circular saw, which removes the leafy tops. As the tops fall to a belt they are carried on to a dehydrator. There they are chopped, passed through a large alfalfa-drying unit, and then blown to the bagging building, where they are reduced to proper size for use in mixed feeds. The meal thus produced is then bagged for shipment. The whole output of meal, going by the name "Floramie Ramie Meal", is reportedly bought by one customer.

When the bundles of detopped stalks reach the head of the incline they fall on a picking belt, where they are opened by hand and fed in a thick layer to the decorticating machine. In the machine they are then decorticated in contact with hot water. Hot, wet, and partially degummed, the fiber emerges hanging over a rubber belt. The residue is carried by conveyors through squeeze rolls to remove as much free water as possible and is then mixed with the tops and leaves as a constituent of the cattle feed.

This machine has a capacity of about 500 pounds of dry fiber an hour. The fiber it produces is clean and white, adhering together in rather thick ribbons that must undergo a further degumming process. At present the degumming is done in a temporary establishment some distance from the main plant. Eventually, of course, degumming facilities will be installed in the present plant to become a part of the continuous production line.

To the Florida Ramie Products Corporation the ramie plant is more than just a source of fiber. It is a whole complex of products, all of which should be used. The company is sponsoring research in the extraction of chlorophyll and vitamin A from ramie.

Available information does not reveal how close to profitable operations this company has progressed. Its substantial buildings were costly to construct on the soft Florida muck. Much of the initial capital of the company must have gone into such necessary, but not always obviously productive, uses. At present the company is enlarging its capital and gives every evidence of developing, with good harvests, into a profitable business. In any event this, like most other ramie companies, is very young, only about three years old, whereas it took almost 50 years back in the late eighteenth and early nineteenth centuries for the cotton industry to make a place for itself in the economic world.

Another of the older ramie developments in the Everglades is that of the Sea Island Mills, Inc., at Moore Haven. This company pioneered in the manufacture of pure and mixed ramie fabrics. In addition to the 180 acres of standing ramie it has at Moore Haven, small quantities are grown for it on contract by a few farmers. Though it is experimenting with a decorticator at Moore Haven, its degumming is done elsewhere. All the ramie used in fabrics made by this company comes from its own decortication plant, which, according to the company, is well beyond the experimental stage.

A newcomer to the ramie industry in the glades is the Peter J. Schweitzer Company of New York, which is, it is said, the second largest maker of cigarette paper in the world. This company is interested in ramie primarily as the source of a raw material with a high cellulose content

for the manufacture of cigarette paper. Where the yield of pure cellulose from the flax straw now being used for this purpose is about 40 percent, the yield from ramie will be twice as much. A trial decorticating plant that uses a machine patented by J. S. Reeves and built by Goslin-Birmingham Manufacturing Company, Birmingham, Alabama, is being set up on the Hillsboro Plantation, near Belle Glade. The present program calls for approximately 10,000 acres of ramie, with one decorticating machine to every 1,400 acres. Eventually between 50,000 and 100,000 acres may be required to produce ramie for paper-making alone, according to Herbert F. Loring, engineering assistant to the president. This company, too, is planning to produce cattle feed and chlorophyll from ramie as a means of reducing the cost of the fiber.

For use in making paper it is the cellulose content of ramie that is important rather than other qualities, such as length of fiber, tensile strength, and freedom from gums. The fiber is cut up into quarter-inch lengths, and the gums are readily removed in the chemical processes incident to the making of paper. Of course, the success of the Schweitzer project will depend upon whether it can produce ramie paper stock at a cost comparable to that of the raw material it now uses.

At Zellwood and Outside Florida

The second center of ramie development in Florida is in and around Zellwood, near Orlando. In this locality the oldest operation is that of the Institute New Plants and Products, Inc. This is a small closely held corporation carrying on the work begun by Dr. Landone before his death. Its operations are now being managed by Clark Maxwell, formerly Dr. Landone's secretary and assistant. The institute, which has approximately 180 acres planted in ramie, is using two portable hand-fed decorticating machines invented by Charles R. Short of Clermont, Florida. Recently it shipped about 5,000 pounds of undegummed ramie fiber for use in the manufacture of automobile upholstery and has orders now for all the additional fiber it can produce.

A new concern at Zellwood is Ramie Mills of Florida, Inc. This company was formed only about a year and a half ago. It has 1,400 acres of land, 540 of which are planted in ramie. Hand-fed portable machines, mounted in pairs on large platforms, move through the field and decorticate the stalks. The fiber is then taken to the degumming plant, where it is put through a thorough process of washing, scouring, and other cleaning in a series of vats. In the past the degummed fiber has been dried on racks in the sun, but the construction of a new steam plant and drying unit is now nearing completion.

Eventually Ramie Mills of Florida expects to carry the fiber through, in one continuous process, to the production of coarse thread for use in shoemaking. This operation will require the installation of carding and spinning equipment. Already a building some 325 feet long to house this part of the work has been constructed, but the necessary textile machinery will probably have to be imported. Unless it is first cut to short staple lengths ramie cannot be handled in the ordinary textile machinery used for cotton because the machines are designed to handle relatively short fibers. There are, however, concerns in Belfast, Ireland, and in Leeds, England, that manufacture special textile machinery for use with ramie.

The latest addition to the ramie projects of Zellwood is the National Ramie Corporation. This company has a capital of \$200,000. Though all its future intentions are not yet clear, it has acquired 7,000 acres of land to be planted in ramie. At present it is establishing the indispensable water control on its land.

Outside of those in Florida the most interesting of the ramie developments in the Sixth District is that of the American Ramie Company with offices in New Orleans and New York. This company is developing and will exploit a decorticating machine invented by Gilbert Brereton. A combination deleafer, harvester, and decorticator, it is pulled through the fields by a tractor. The deleafer part of the apparatus consists of a pronged rotor that strips the leaves off the plants as it turns. A combine then cuts the stripped stalks and feeds them automatically into the decorticating part of the machine. There they pass through scrapers, which move at different rates of speed to keep the ribbons taut. As the decorticated ribbons emerge at the rear, the residue is spewed out upon the ground, where it can be left for fertilization. The ribbons are then carried on an inclined conveyor to a side car or truck into which they are loaded automatically.

Test runs made with the Brereton machine at Atmore, Alabama, in May and tests made at Covington, Louisiana, in June demonstrated to the satisfaction of the inventor and the engineers working with him, but not to that of all of the observers, the soundness of the general principles embodied in this machine. The ramie as it comes from the machine is somewhat tangled and has a good bit of bark and shive adhering to it. These must be removed by another machine in a subsequent cleaning operation. The obvious defects that appeared seem to be ones that can be easily corrected, and the machine may be ready for manufacture sometime next spring. In the present model the decorticator controls are mounted on the decorticator itself and not on the tractor part of the machine. On future models, however, the controls will be mounted, according to plans, on the tractor so that one man can perform the whole job. Under favorable conditions it is hoped that one man may be able to harvest and decorticate the ramie on about 15 acres a day.

The American Ramie Company expects to grow no ramie. It will make contracts with farmers who will grow the ramie and sell the decorticated fiber to it at an agreed price. The fiber will be shipped to the company's degumming plant in New Orleans. Root stock sufficient to plant 10,000 acres has been supplied to farmers in several states.

Unanswered Questions

Even a brief survey of current developments shows that the ramie industry has come quite a distance since 1945. It is too early, however, to tell what the optimum size and form of its various units will be. For some time to come, and perhaps permanently, various forms may persist side by side. There may be units like the Institute New Plants and Products that will both grow ramie and decorticate it. Others may grow, decorticate, and degum it. Still others may decorticate and degum but leave to independent farmers the growing of the crop with all the risks. Other units of the industry may, as Ramie Mills of Florida plans to do, control the whole process from growing on through the manufacture of a finished product.

Because ramie can be decorticated and degummed with

greater ease and economy when it is green, there will probably develop a tendency toward a closer integration of the first three operations. The demands of the market may, in effect, force this kind of development. Two years ago, it was commonly reported, manufacturing concerns preferred to buy undegummed fiber and do their own degumming in order to be sure of a suitable quality. Now, however, it is generally reported, the domestic market for undegummed fiber is shrinking. More and more the mills are beginning to demand well-degummed fiber, it is said, and the closer the fiber is to a condition ready for spinning the better they like it. If this attitude persists, certain textile operations will probably be added to decorticating and degumming in a continuous process.

Another question to which there is yet no clear answer concerns the relative advantages of using portable machines to decorticate the fiber in the field against those of using large central plants with stationary machines. For the central plant with stationary machines the cost of hauling a great amount of green material is a limiting factor. The large machine now being used by Newport Industries, for example, can probably handle green material from 1,600 acres if it is planted so that only a part of the acreage matures at a time. If a second machine were installed in the present plant, 3,200 acres could just as probably be handled. But as the acreage increased, the length of haul would increase, and with it the expense. This expense is important, since from 80 to 90 percent of the ramie plant is water. The cost of the fiber, therefore, mounts rapidly as the length of haul increases.

Decortication in the field by means of portable machines would do away with much of the expense of hauling water and waste matter. In further support of field decortication it is said that the leaves and residue can be left on the ground as fertilizer. Ramie is a voracious consumer of plant nutrients, and most of what it takes out of the soil is in the waste products and not in the fiber. Field decortication would thus seem to reduce to a minimum the need for commercial fertilization. Of late, however, this proposition has been questioned. The more experienced growers of ramie are now convinced the green material contributes so little to the soil that even when it is allowed to remain in the field commercial fertilization is necessary.

The advocates of central-plant decortication argue that only with their method which permits recovery of by-products as well as the fiber, can full use be made of ramie. Ramie meal, for example, is superior to alfalfa as cattle feed in almost all respects and has sold for as high as \$50 a ton in Florida. Though the cost of dehydration is high, the returns from the sale of meal would probably more than offset the cost of commercial fertilizer for the fields.

Most of the portable decorticators now have to be fed by hand. The sight of a portable decorticator being fed a few stalks at a time by two farm workers and the ribbons being taken out by two more on the other side raises a serious question of its economy, especially when field hands are paid 50 cents an hour. Such machines may, like the Japanese machine in the Philippines, be profitable where labor is almost costless, but not where wages are high.

Seemingly therefore, a portable machine to decorticate in the field would be profitable only if it could obviate almost all hand work. A machine, to be completely a machine,

must be able to feed itself. If or when the Brereton invention is perfected, it may be just such a machine. At least it is now the only one that attempts to harvest and decorticate a large acreage in one day with minimum labor.

When alternative technical processes for accomplishing a certain task are available and may be organized into industrial units in various ways, just which of the processes will predominate and which of the forms of organization will succeed depends upon their comparative costs. All serious producers in the ramie industry are now trying to achieve lower unit costs. The success of their efforts will determine the rapidity with which the industry develops from now on.

The Outlook

It is clear that the general outlook for the ramie industry as it is in 1947 reveals a bright future on the demand side. Manufacturers are increasingly voicing an interest in ramie, and even the general public is learning something of its possible role among consumers goods. On the supply side, however, the industry still faces serious problems. Some of them are technical, though these are less serious than they have been. Others are economic and organizational in character.

From a technical standpoint the obstacles to supply no longer seem insurmountable. In fact they have been surmounted in a fashion, even though a great deal remains to be done. What may ultimately prove to be of great benefit to the industry is a research program announced by the United States Department of Commerce in April of this year. That department will provide more than \$50,000 to supplement other funds advanced by the Department of Agriculture and by the State of Florida for research into all phases of ramie cultivation and processing. Sponsored by the Industrial Research and Development Division of the Office of Technical Services, the project is designed to provide potential growers and manufacturers with better information on the agronomic and botanical aspects of ramie as well as on the processing and utilization of ramie fiber.

An achievement of lower growing and processing costs, the heart of the industry's economic problem, rests upon a careful weighing of new technical advances and the adoption of those that promise to give the most economical operations. Other economic problems are the provision of adequate but judicious financing and an avoidance of unscrupulous promotion. The ramie industry still feels the unfavorable effects of such promotion in the past. Business development that is conservative as well as imaginative is needed for steady progress in the industry.

There remains an organizational problem, the sort of problem new industries often have to face. It is caused by the industry's various segments' losing step with one another. An example of this type of problem was presented by the cotton industry in its early days. There is a close analogy between these two industries. Cotton, like ramie, was only an Oriental product in the eighteenth century. Again like ramie, it caught the fancy of the people. Before that time it had been produced laboriously by hand in the Orient and then exported to England. To satisfy the enthusiastic demand for it, however, the production of large quantities in England itself was needed. The lack of technical facilities for spinning and weaving on a large scale proved to be as much of a handicap to cotton as the difficulty in decorticating has proved to ramie. Little by little, however, inventions

invaded one segment and then another of the cotton industry—spinning, weaving, carding, ginning—with the result that at different times at least one of them was out of pace with the rest. Many years passed before cotton flowed continuously from the American plantation to the gin and on through the English mills.

The ramie industry is now in a position somewhat similar. At present more ramie is being grown than can be processed with the existing facilities. The crop grows and matures in complete disregard, of course, of the means for its subsequent handling. If no means of decorticating the matured crop is available, it can only be cut down and left on the ground—a total loss of at least that particular cutting. If, on the other hand, as construction materials become more abundant a great expansion of decorticating and degumming facilities should develop, the new plants might be handicapped by a shortage of raw material. This would mean idle plant capacity, and idle plant capacity usually means high costs and the possibility of unprofitable operation. Obviously the best interests of all persons concerned require that all the different segments of the industry keep in step as closely as possible if loss in one branch or another is to be avoided.

Close co-ordination between the different branches of the industry is necessary because each of them is related to the others, either as a source of raw material or as a market, and sometimes as both. A decorticating plant might, for instance, buy its ramie from independent growers and sell its decorticated ramie ribbon to a degumming plant. Therefore the problem is one of bringing about an equilibrium among a series of markets. Where one concern controls the entire process, from the growing of the raw material through the manufacture of a finished product, this problem is not serious. In all other cases, however, some form of close and continuous co-operation among the different segments of the industry should be valuable.

During these years in the life of the ramie industry before it has settled down into a stable pattern, would-be growers of ramie, investors, and bankers should use caution. It is easy for a person looking out over a luxuriant field of ramie, or running the long silky fibers through his fingers, or handling the beautiful and diversified fabrics that have been made from the fiber to let his enthusiasm get the better of his judgment. There are many pitfalls and other traps for the unwary between ramie in the field and the finished manufactured product.

Many farmers scattered all over the South have been contemplating the growing of ramie as an alternative to cotton growing. The lures are the low labor requirements for ramie culture as well as the high income per acre that it promises. Unless he wants to do so merely for his own edification, however, no farmer should grow ramie until he has made sure of a number of things. In the first place, he should be certain that he realizes the cost of preparing land for ramie culture and the hidden cost which comes from not using his land for some other purpose. During the first year no commercial crop can be expected. The first year's cost of preparing and planting the land is likely to be very high, the actual amount depending of course upon the condition of the land to begin with. Though no definite figures for this cost can be given, estimates run from \$90 an acre to as much as \$200.

As an agricultural crop, ramie is subject to certain hazards. If it is planted in too northerly a latitude, the

roots may freeze. If the land is improperly drained, they may rot. If it is planted in a region subject to tornadoes, one or more stands may be lost through wind damage. This year producers in Florida have already lost some of their ramie from the latter two causes.

Fertilization may also be a serious problem. The heavy demands made on the soil by ramie necessitate that the producer put back into it what the crop takes out. If the soil is deficient in certain elements, weak and commercially undesirable stands may be the result.

When a farmer has assured himself that he is prepared in all these respects to grow ramie, he should then make certain that harvesting and decorticating equipment will be available as his different crops mature. A crop can be lost through inability to harvest and decorticate it as well as through damage from natural causes.

Potential investors in ramie enterprises should begin by remembering the long history of failures in this industry. Before putting money into any particular enterprise they should investigate the financial integrity and the competence of its management. In addition, however, they should have some unbiased engineering opinion on the efficiency of the technical processes used by the company. Technical inefficiency, if not downright impracticability, has been one of the most prolific sources of financial failure in the past. Above all, an investor should be on his guard against unscrupulous promoters. Fortunately for potential investors as well as for the industry there seems to be little, if any, of this sort of activity at the present time.

If an investor is contemplating putting his money into a wholly new venture to develop some new and untried technical process, he can comfort himself with the thought that he is performing a very necessary function in this country's capitalistic economy. Progress has always come through the efforts of men who were willing to risk their money on an innovation. Nevertheless, such investors should be aware of the risk they are taking. They should remember that the technical difficulty of decorticating ramie makes the risk of failure high.

Before many years bankers may be called on to make loans to farmers for growing ramie. They are already being asked for working-capital loans by ramie concerns. In making a farm loan a banker will want to ask the questions that a wise and careful farmer would ask himself before he takes up ramie culture. When making a loan to a producer for working-capital purposes a banker should do so either only on the security of warehouse receipts that cover already processed ramie for which a definite market exists, or on assets equally good.

The necessity for farmers, investors, and bankers to use caution casts no doubt on the future of the ramie industry and on the important contribution it can make to the agriculture and industry of the South. It is simply because the ramie industry has such a bright future before it and can contribute heavily to the economic prosperity of a region seeking both new crops and new industries that its future must not be jeopardized by complications arising from false claims, false hopes, and hasty or ill-considered action. Hard work on the many technical problems that still remain and conservative but courageous business development will be worth more to the industry at this stage than will any amount of merely promotional activity.

EARLE L. RAUBER.

State Gasoline Tax Collections

An Indicator of Sixth District Economic Activity

WHEN the motorists in the Sixth District states once more could buy their gasoline legally without surrendering ration coupons, they were not only freed from one of the greatest irritations of the war but they also were placed in the position of helping to restore one of their state governments' principal sources of revenue. Purchases of gasoline made by them and by truckers brought the gasoline-tax revenues of the District state governments in the first half of 1947 to a level 172 percent higher than that for the same period in 1946. In June, collections were 24 percent greater than they were during January 1942, the month in which the record for collections up to that time had been established.

At the time of the Pearl Harbor attack collections of gasoline taxes made up 41 percent of all the taxes, except those of unemployment compensation, collected by the Six States. Alabama officials looked to gasoline sales to provide 35 percent of their tax revenues. In Florida the expected proportion was 47 percent, in Georgia 48, in Louisiana 28, in Mississippi 39, and in Tennessee 49. On the average the Sixth District states' reliance on this tax contrasted sharply with that of the combined 48 states, for which gasoline taxes provided only 25 percent of the total state tax revenues.

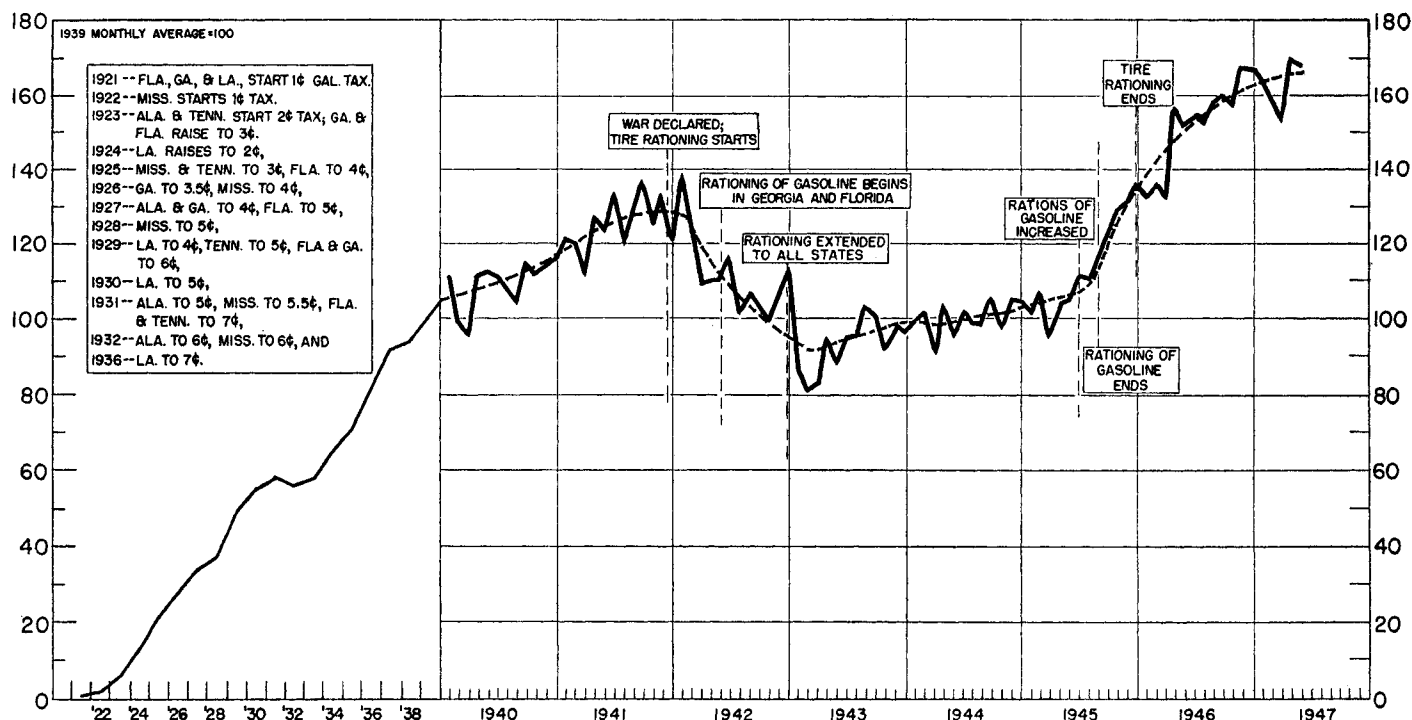
At the beginning of the war many state officials, tax analysts, and the bondholders of some of the states, especially those in the Sixth District, feared that rationing and other wartime restrictions would work a drastic cut in the gasoline-tax revenue. Highway traffic was first limited by tire ration-

ing. In addition new passenger cars were no longer being manufactured. One of the most pessimistic forecasters predicted that a fourth of the existing cars would be off the road by July 1943. Soon even rationed gasoline was hard to obtain. The District was at that time dependent to a great extent on ocean-tanker service, and the submarine menace was so close that some residents saw the sinking of tankers.

To help readers of the *Review* keep abreast of developments in this important source of state revenue this bank in 1942 began to compile an index of state gasoline-tax collections for each of the Sixth District states. Since that time the indexes have been published each month. In this issue they are printed on page 88. The monthly average of collections for the prewar year of 1939 is used as the base. Thus it is possible to determine how the collections for any month since 1939 compare on a percentage basis with the average monthly collections in the base period. The indexes are based on data collected each month from officials of the state governments.

During the war collections did decline. By January 1943 they were 85 percent of the 1939 monthly average and 42 percent below the level for the highest month then on record, January 1942. But, contrary to pessimistic predictions, at the end of the war the state governments had surplus funds in their treasuries. In the first place, the collections did not decline as much as some persons had expected. Essential driving, which was not restricted by rationing, increased because of the war activity. Old automobiles,

SIXTH DISTRICT STATE GASOLINE TAX COLLECTIONS



it was found, had greater lasting qualities than had been anticipated. New pipe lines were laid to help transport motor fuel. Moreover, vitally needed trucks and other commercial vehicles, according to the *Petroleum Almanac*, consumed more than twice as much gasoline per vehicle as did private cars. Throughout the United States, although consumption by private passenger vehicles declined 35 percent between 1941 and 1943, consumption by commercial vehicles fell only 14 percent. A decline greater in expenditures than in tax collections also took place because of the virtual elimination of all but absolutely essential highway building.

Collections were increasing even before the close of the war. With the liberalization of rationing in June 1945 and its elimination the following August collections rose even more rapidly. Apparently the only limitations on motor-fuel consumption were placed by the consumers' pocketbooks—1946 was the year of record incomes—and the number of cars. Despite reconversion difficulties in the automobile industry there were 346,000, or 13 percent, more motor vehicles registered in the Sixth District states in 1946 than there were in 1945, a figure 5 percent more, even, than the number registered in 1941. In addition, the record 1947 revenues must mean either that Sixth District registered vehicles were being used then more than they were in 1941 or that travel by out-of-state cars and trucks over the Six States' highways was increasing.

Some observers have regarded the gasoline tax as "depression proof." Although perhaps not as sensitive an indicator of good and bad times as is the income tax, the gasoline tax, like any other sales tax, must be paid out of incomes and naturally fluctuates with changes in income payments.

It is difficult, however, to determine just how much changing business conditions have influenced these collections in the past. The increase over the years in the revenue derived from the tax has resulted from many factors other than changing business conditions. These factors include the increased number of motor vehicles, better roads, and changes in the tax rates. When Florida, Georgia, and Louisiana started their one-cent-a-gallon tax in 1921 there were only 572,000 motor-vehicle registrations in the Sixth District states, but by 1941 the number had grown, almost every year, until it was almost five times the 1921 total. During the intervening period rates were also increased frequently. Unfortunately for economic analysis, but perhaps fortunately for the condition of the state treasuries, legislators have often increased the tax rates during depression years. Nevertheless, yearly revenues reflected the depression in 1932 and 1933 and the recession in 1937 and 1938.

Except for the raising of the Louisiana tax rate in 1936 the present tax rates have been stabilized since 1932. There has been a close correlation between total income payments for the Sixth District states and total gasoline-tax collections from 1934 through 1941. In the postwar period the indexes of gasoline-tax collections may, therefore, serve as a fairly reliable tool for measuring directly changes in one of the most important types of consumer expenditures and for measuring indirectly changes in consumer incomes.

CHARLES T. TAYLOR.

This is the fifth in a series of articles describing the compilation and uses of some of the Sixth District statistical series. Back figures for the indexes of gasoline-tax collections may be obtained on request.

Sixth District Indexes

DEPARTMENT STORE SALES*						
Place	Adjusted**			Unadjusted		
	June 1947	May 1947	June 1946	June 1947	May 1947	June 1946
DISTRICT.....	365	367	365	307	348	306
Atlanta.....	398	405	416	327	385	341
Baton Rouge....	384	390	379	338	386	333
Birmingham....	353	364	337	304	346	289
Chattanooga....	336	375	387	303	375	348
Jackson.....	335	328	352	282	308	296
Jacksonville....	413	425	442	364	404	389
Knoxville.....	324	370	408	265	351	335
Macon.....	315	329	356	268	319	303
Miami.....	366	350	334	292	308	268
Montgomery....	377	367	342	317	345	287
Nashville.....	395	470	423	363	461	389
New Orleans....	329	323	312	290	303	274
Tampa.....	441	428	424	397	428	381

DEPARTMENT STORE STOCKS						
Place	Adjusted**			Unadjusted		
	June 1947	May 1947	June 1946	June 1947	May 1947	June 1946
DISTRICT.....	280	309r	252	283	300r	255
Atlanta.....	393	370	430	360	376	394
Birmingham....	225	219	209	211	224	196
Montgomery....	334	316	343	304	321	313
Nashville.....	445	415	414	415	421	386
New Orleans....	294	295	198	276	304	185

LUMBER PRODUCTION*						
Place	Adjusted**			Unadjusted		
	May 1947	April 1947	May 1946	May 1947	April 1947	May 1946
SIX STATES.....	n.a.	109	124	n.a.	113	122
Alabama.....	n.a.	107	133	n.a.	110	133
Florida.....	n.a.	86	123	n.a.	91	126
Georgia.....	n.a.	142	139	n.a.	136	138
Louisiana.....	n.a.	90	78	n.a.	90	78
Mississippi.....	n.a.	108	112	n.a.	105	108
Tennessee.....	n.a.	178	194	n.a.	185	194

COTTON CONSUMPTION*				CONSTRUCTION CONTRACTS			
	June 1947	May 1947	June 1946		June 1947	May 1947	June 1946
TOTAL.....	141	162	161	DISTRICT....	332	354	354
Alabama.....	148	191	168				
Georgia.....	139	152	161	Residential..	414	467	368
Tennessee....	122	121	130	Other.....	293	300	347

Place	MANUFACTURING EMPLOYMENT***			GASOLINE TAX COLLECTIONS***		
	May 1947	Apr. 1947	May 1946	June 1947	May 1947	June 1946
SIX STATES.....	142	143r	134	172	168	155
Alabama.....	155	154	139	185	174	166
Florida.....	112	120r	114	165	171	149
Georgia.....	132	134r	128	168	162	151
Louisiana.....	138	136r	134	162	149	147
Mississippi....	152	154r	138	178	160	158
Tennessee.....	153	154r	143	182	186	163

CONSUMERS' PRICE INDEX				ELECTRIC POWER PRODUCTION*			
Item	May 1947	Apr. 1947	May 1946		May 1947	Apr. 1947	May 1946
ALL ITEMS.....	161	162	135	SIX STATES.....	292	303	246
Food.....	197	200	147	Hydro-generated	260	296	295
Clothing.....	181	181	151	Fuel-generated	333	312	181
Rent.....	n.a.	n.a.	115				
Fuel, elec., and ice..	122	122	111	ANNUAL RATE OF TURNOVER OF DEMAND DEPOSITS			
Home furnishings..	173	176	154		June 1947	May 1947	June 1946
Misc.....	142	143	132	Unadjusted..	18.4	17.3	16.1
Purchasing power of dollar....	.62	.62	.74	Adjusted**..	18.9	18.6	16.6
				Index**.....	73.2	71.9	64.1
CRUDE PETROLEUM PRODUCTION IN COASTAL LOUISIANA AND MISSISSIPPI*				*Daily average basis			
	June 1947	May 1947	June 1946	**Adjusted for seasonal variation			
Unadjusted.....	248	241	219	***1939 monthly average=100; other indexes, 1935-39=100			
Adjusted**.....	250	245	221	rRevised			
				n.a. Not available			

District Business Conditions

Finance

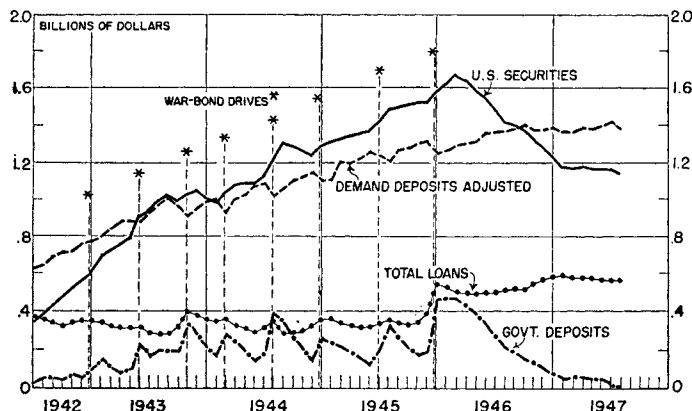
ANOTHER wartime banking regulation was lifted July 1 when member-bank war-loan accounts were no longer exempted from reserve requirements. In Sixth District member banks these accounts, which had amounted to 883 million dollars at their peak in December 1945, had declined to approximately 26 million. Consequently the resumption of reserve requirements against these accounts resulted in little increase in total required reserves. Nevertheless, coupled with the Treasury's budgetary surplus at the closing of the 1947 fiscal year, the ending of the exemption directs attention to other factors bringing about the expansion and contraction of District bank deposits.

The President on April 13, 1943, signed an amendment to the Federal Reserve Act suspending, until six months after hostilities had ceased, provisions of the law that required reserves to be set up against those Treasury balances resulting solely from subscriptions issued under the Second Liberty Loan Act as amended.

The amendment to the Reserve Act was designed to help the money market by avoiding excessive transfers to the Federal Reserve banks. It allowed the banks to give the Treasury credit in a special war-loan account, on which the Treasury could draw as necessary, in order to pay for United States securities, which either they or their customers bought.

Both the banks' loans to persons and businesses and their purchases of private-corporation securities, of course, do just as much to expand total bank deposits in the banking system as a whole as Government borrowing does. Because of the large sums involved in financing the war, however, the expanding effect that bank lending can have on bank deposits was most dramatically illustrated by the relationships between Government-security holdings, war-loan accounts, and the accounts of other depositors.

WAR FINANCING and BANK-DEPOSIT CHANGES
Sixth District Weekly Reporting Member Banks



During each war-loan drive Government deposits expanded in response to the subscriptions of businesses and individuals, which decreased demand deposits adjusted, and to the subscriptions of the banks themselves. As the Treasury spent the proceeds of the loans between drives, demand deposits adjusted increased. Because it has reduced its deposits, principally to retire the banks' holdings of securities, growth in 1946 and 1947 of demand deposits adjusted has depended chiefly on an expansion in loans.

During each war-loan drive a decline in personal and business deposits represented by demand deposits adjusted and an increase in Government deposits occurred as securities were purchased by investors other than banks. Because of this shift increased reserves became available to the banks and the banks were able to buy securities for their own accounts. Government deposits, consequently, increased much more than personal and business deposits declined.

The changes that took place in these two types of deposit accounts at Sixth District weekly reporting member banks during the war-bond drives are shown in the chart. Between war-loan drives the Treasury drew upon its balances to meet expenditures. Government expenditures, of course, involved payments to persons and businesses, with the result that during these periods demand deposits adjusted grew.

The Victory Loan Drive at the end of 1945 resulted in the highest level of Government deposits at the weekly reporting member banks for the entire war-financing period. Treasury withdrawals since that time, however, because they were used largely to retire Government securities owned by the banks, have not greatly increased personal and business deposits.

In addition, the rise of these deposits has been held down to the extent that tax receipts have been used to redeem bank-held Government securities. Other-than-Government deposits have grown since the end of the war chiefly because of an expansion in loans to non-Governmental borrowers.

In all member banks in the Sixth District at the end of June demand deposits adjusted were only 61 million dollars greater than they were at the end of June 1946, contrasted with the much larger increases that occurred in corresponding 12-month periods during the war. Total deposits, however, because of the decrease in war-loan accounts declined 488 million dollars. Member-bank holdings of Government securities have been reduced 572 million dollars.

Now that the Government's reliance on war-loan accounts to retire its debt has been ended and so long as no net additional Government borrowing from banks is required, future expansion or contraction of bank deposits for the banking system as a whole depends on the course of personal and business loans.

C.T.T.

Industry and Employment

Now that their summer vacation periods are past, the cotton-textile mills are looking forward to increased activity and a return to their previous high levels of production. Those in the District consumed an average of 11,482 bales daily in May, compared to the high consumption rate of 13,121 in January. Though mills in Georgia accounted for most of the decrease, they were mainly heavy-yarn mills that had to curtail operations because of the depressed state of the chenille, heavy duck, and cotton-hosiery industries. Cotton-duck mills had reduced their operations because the Government was disposing of large supplies of heavy cotton duck. Fine yarns and fabrics are still in great demand, and prices for them appear to be firm. Plants producing toweling, sheeting, gray goods, tire cord, and mixed fabrics are operating at almost capacity production. High cotton prices and the prospects of an oversupply of cotton goods are causing many mills in the District to experiment more with rayon, nylon, and other synthetic fibres in the production of new materials and cotton blends.

Sixth District Statistics

RETAIL JEWELRY STORE OPERATIONS			
Item	Number of Stores Reporting	Percent Change June 1947 from	
		May 1947	June 1946
Total sales.....	23	— 19	— 5
Cash sales.....	22	— 20	— 24
Credit sales.....	22	— 18	+ 20
Accounts receivable, end of month.....	22	+ 1	+ 42
Collections during month.....	23	— 9	+ 0

WHOLESALE SALES AND INVENTORIES*					
Items	No. of Firms Reporting	SALES		INVENTORIES	
		Percent Change June 1947 from		Percent Change June 30, 1947, from	
		May 1947	June 1946	May 31 1947	June 30 1946
Automotive supplies.....	6	— 5	— 2	6	+ 42
Shoes.....	3	— 22	+ 8	—	—
Drugs and sundries.....	6	— 4	+ 8	—	—
Dry goods.....	9	— 13	— 27	4	+ 52
Full-line elec. goods.....	3	— 6	+ 23	..	—
Wiring supplies, constr. materials.....	7	+ 5	+ 73	6	+ 220
Electrical appliances and specialties.....	5	— 13	+ 35	4	+ 109
Fresh fruits and vegetables.....	3	— 23	+ 5	..	—
Confectionery.....	5	— 18	+ 12	..	—
Groceries.....	..	..	..	..	..
Full lines.....	27	— 5	+ 24	14	+ 41
Specialty lines.....	9	— 6	— 5	5	+ 7
Beer.....	3	+ 1	— 46	3	+ 23
General hardware.....	8	— 7	+ 13	4	+ 79
Industrial supplies.....	3	— 0	+ 52	..	—
Tobacco products.....	6	— 17	— 9	..	—
Miscellaneous.....	18	+ 2	+ 31	13	+ 88
Total.....	121	— 6	+ 16	59	+ 68

* Based on U. S. Department of Commerce figures.

CONDITION OF 28 MEMBER BANKS IN SELECTED CITIES (In Thousands of Dollars)					
Item	July 23 1947	June 25 1947	July 24 1946	Percent Change July 23, 1947, from	
				June 25 1947	July 24 1946
Loans and investments—					
Total.....	2,291,111	2,301,899	2,539,611	— 0	— 10
Loans—total.....	703,888	705,957	618,380	— 0	+ 14
Commercial, industrial, and agricultural loans.....	397,235	404,321	318,601	— 2	+ 25
Loans to brokers and dealers in securities.....	6,836	7,424	16,624	— 8	— 59
Other loans for purchasing and carrying securities.....	81,050	82,089	127,460	— 1	— 36
Real estate loans.....	55,657	55,438	39,598	+ 0	+ 41
Loans to banks.....	6,331	4,548	3,964	+ 39	+ 60
Other loans.....	156,779	152,137	112,133	+ 3	+ 40
Investments—total.....	1,587,223	1,595,942	1,921,231	— 1	— 17
U. S. direct obligations.....	380,719	402,043	679,314	— 5	— 44
Obligations guaranteed by U. S.....	1,020,484	1,007,366	1,046,534	+ 1	— 2
Other securities.....	186,020	186,533	195,383	— 0	— 5
Reserve with F. R. Bank.....	433,516	426,638	438,817	+ 2	+ 1
Cash in vault.....	41,537	40,726	38,086	+ 2	+ 9
Balances with domestic banks.....	170,234	163,525	185,084	+ 4	— 8
Demand deposits adjusted.....	1,761,551	1,747,835	1,712,100	+ 1	+ 3
Time deposits.....	547,837	546,916	531,661	+ 0	+ 3
U. S. Gov't deposits.....	15,242	19,329	256,647	— 21	— 94
Deposits of domestic banks.....	443,963	447,653	536,807	— 1	— 17
Borrowings.....	6,000	5,000	6,500	+ 20	— 8

The series of the weekly condition reports of 20 Sixth District member banks has been revised to include eight additional banks. Back figures beginning with July 3, 1946, and a description of the revision may be obtained from the Research Department of this bank.

It is too early to tell what effects the coal industry's new wage agreement will have on that industry and on other industries that use large quantities of coal. Under the agreement the miners will receive a daily wage of \$13.05 instead of \$11.85 and the work day becomes eight hours at straight-time rates instead of nine hours with seven at straight-time and two at overtime, premium, rates. Saturday work will now bring no overtime pay unless it has been preceded by five days' work in the same week. An additional five cents a ton will be paid into the miners' welfare fund.

By removing rental ceilings on new residential construction, the new rent-control act, it is believed, will give added impetus to the construction of rental units. Because of continued sales resistance in the real-estate market, the continuation of FHA's underwriting of rental loans, and the availability of long-term financing the erection of rental housing should be more attractive to builders in the region.

Work stoppages in District manufacturing industries during June and July have been about normal. The work picture was brightened for the Birmingham area, in fact for the entire region, with settlement of the coal dispute and with the prompt return of workers to the mines at the end of industrial vacation periods. Eighteen hundred railroad workers temporarily out of work because of the coal shortage also returned to their jobs in the Birmingham and Knoxville areas. After some labor difficulty in June, construction activities at Du Pont's 20-million-dollar nylon plant in Chattanooga were resumed. In Mobile, however, 5,400 shipyard workers were on strike in July, when negotiations between the union and management broke down over the terms of a new contract.

Over-all employment in the District continued to increase in June largely because of seasonal increases in farming, food processing, and construction activity. At the same time, unemployment mounted in some states as many young people and veterans moved from schools into the labor market. In Florida an increase had occurred in May with the early completion of citrus-fruit-canning operations and relative inactivity in the shipbuilding and cigar industries. The Mobile area reported a 7,250 surplus of all types of workers in May but a shortage of skilled mechanics and sheet-metal workers. In most industries that are affected only slightly by seasonal factors hiring has been confined principally to replacements, and some employers, as a result, are more exacting in their requirements for the few new workers.

W.E.U.

Agriculture

According to the Department of Agriculture's midseason survey, District farmers will produce a slightly larger volume of crops in 1947 than they did last year. Production estimates are based on July 1 crop conditions.

The prospects for corn, the principal feed-grain crop, are the best in years, and well-above-average yields per acre are anticipated. Total production, estimated at 236 million bushels, may be about 5 percent greater than it was last year. Though the District's farmers normally have only about 15 percent of the nation's corn acreage, their production this year will be especially significant in view of the relatively small crop in the main corn-producing states.

The Louisiana rice growers' acreage is about 2 percent greater than it was last year. District rice production, estimated at 23 million bushels, is almost a third of the nation's prospective bumper crop.

Cane production for sugar and seed is expected to be 6.7

million tons or about a fifth larger than last year's crop. Both Florida and Louisiana growers have larger acreages than they had last year. Florida cane yields are expected to be slightly below normal because of the February freeze, but in Louisiana, where about 90 percent of the nation's sugarcane acreage is normally grown, good yields are expected.

Tobacco production, as indicated by July conditions, will be less than the large crop of last year but considerably more than the 10-year average. Total production is estimated at 285 million pounds for the Six States. In the Tennessee burley belt lower yields are anticipated and the acreage is considerably smaller than it was last year. In the Georgia flue-cured area, however, acreages are slightly larger than those of last year and July 1 conditions gave indications that yields may set a record.

The District potato growers planted only 167,000 acres this year, or about one-fifth fewer acres than they planted in 1946. This reduced acreage, coupled with lower yields in all of the producing states, is expected to result in a total crop of only 13.9 million bushels, an output well below that recommended as a desirable production goal.

Although a 9-percent increase in sweet-potato acreage was recommended, the acreage in cultivation is 6 percent below that of last year. Louisiana growers reduced their acreage considerably, and the acreage planted in Tennessee, Alabama, and Mississippi is also slightly smaller than it was last year. District production, estimated at 34.5 million bushels, is expected to be about 9 percent less than the quantity produced in 1946.

The acreage of peanuts grown as a separate crop is slightly below that of last year's crop except in Florida. Though the crop got off to a late start in Georgia, the principal producing state, the condition is good in most localities. Production estimates will not be available until August.

On July 1 the District's cotton crop, estimated at 6.8 million acres, was only 4 percent larger than last year's acreage. In spite of favorable prices District farmers planted a crop far short of the suggested goal for production. Although cool weather and frequent rains interfered with planting, it is doubtful that farmers in the Six States intended to increase their cotton-crop acreage 19 percent over that of last year as recommended in the production goals. B.R.R.

Trade

Largely because expanding credit sales offset declining cash sales Sixth District department stores sold approximately the same dollar volume of goods in July this year that they did in July 1946. After adjustment for seasonal variation the June index of 365 percent of the 1935-39 average was the same as that in 1946 and two points less than the May 1947 index, the record high.

Customers of the other types of retailers reporting to this bank have also been using their credit more this year than they did in 1946. Their credit buying is one of the reasons in addition to the continued high level of income that they could spend more during the first half of 1947 than they did during the same period last year. Increased prices for many other living-expense items, especially food, that they customarily buy for cash left less of their current incomes for the cash purchase of other items. Despite the resulting decline in cash purchases for these other items, they still were able, by using credit, to buy a greater dollar volume of goods.

Sixth District Statistics

RETAIL FURNITURE STORE OPERATIONS			
Item	Number of Stores Reporting	Percent Change June 1947 from	
		May 1947	June 1946
Total sales.....	89	— 18	+ 7
Cash sales.....	81	— 9	— 18
Instalment and other credit sales..	81	— 17	+ 15
Accounts receivable, end of month	88	+ 2	+ 40
Collections during month.....	88	— 9	+ 18
Inventories, end of month.....	67	— 8	+ 8

DEBITS TO INDIVIDUAL BANK ACCOUNTS (In Thousands of Dollars)						
Place	No. of Banks Report- ing	June 1947	May 1947	June 1946	Percent Change June 1947 from	
					May 1947	June 1946
ALABAMA						
Anniston.....	3	18,894	19,824	19,434	— 5	— 3
Birmingham....	6	274,394	278,657	224,942	— 2	+ 22
Dothan.....	2	9,288	9,769	7,802	— 5	+ 19
Gadsden.....	3	14,847	17,557	13,022	— 15	+ 14
Mobile.....	4	123,052	126,476	98,222	— 3	+ 25
Montgomery...	3	62,537	65,010	51,498	— 4	+ 21
FLORIDA						
Jacksonville...	3	235,573	232,211	204,092	+ 1	+ 15
Miami.....	7**	195,914	198,508	173,105	— 1	+ 13
Greater Miami*	12**	268,310	281,993	247,730	— 5	+ 8
Orlando.....	2	40,408	43,459	46,685	— 7	— 13
Pensacola.....	3	30,069	31,585	27,317	— 6	+ 10
St. Petersburg..	3	43,443	48,840	42,722	— 11	+ 2
Tampa.....	3	94,501	98,746	93,397	— 4	+ 1
GEORGIA						
Albany.....	2	12,685	13,637	10,991	— 7	+ 15
Atlanta.....	4	676,146	729,671	592,540	— 7	+ 14
Augusta.....	3	45,831	49,268	43,151	— 7	+ 6
Brunswick.....	2	7,818	8,529	7,865	— 8	— 1
Columbus.....	4	51,021	57,302	44,620	— 11	+ 14
Elberton.....	2	3,265	3,821	2,861	— 15	+ 14
Gainesville*	3	10,694	12,662	12,615	— 16	— 15
Griffin.....	2	9,951	10,393	7,793	— 4	+ 28
Macon.....	3	51,198	56,396	46,175	— 9	+ 11
Newnan.....	2	6,446	6,658	6,839	— 8	— 6
Rome*.....	3	16,992	18,438	16,698	— 8	+ 2
Savannah.....	4	81,198	80,454	82,853	+ 1	— 2
Valdosta.....	2	9,472	10,178	10,138	— 7	— 7
LOUISIANA						
Baton Rouge...	3	71,884	74,528	54,406	— 4	+ 32
Lake Charles...	3	25,148	24,045	20,667	+ 5	+ 22
New Orleans...	7	555,219	535,873	523,703	+ 4	+ 6
MISSISSIPPI						
Hattiesburg...	2	14,491	15,730	13,493	— 8	+ 7
Jackson.....	4	103,259	101,224	80,093	+ 2	+ 29
Meridian.....	3	22,883	23,770	23,137	— 4	— 1
Vicksburg.....	2	20,950	20,727	20,769	+ 1	+ 1
TENNESSEE						
Chattanooga...	4	127,879	121,819	110,960	+ 5	+ 15
Knoxville.....	4	99,813	101,042	91,821	— 1	+ 9
Nashville.....	6	261,912	249,017	228,366	+ 5	+ 15
SIXTH DISTRICT						
32 Cities.....	108	3,391,438	3,454,331	3,017,656	— 2	+ 12
UNITED STATES						
334 Cities.....		94,474,000	87,833,000	86,655,000	+ 8	+ 9
* Not included in Sixth District total						
** This series comparable with former 8-bank series in Miami and 13-bank series in Greater Miami because of bank consolidation.						

* Not included in Sixth District total

** This series comparable with former 8-bank series in Miami and 13-bank series in Greater Miami because of bank consolidation.

A monthly release showing the chief asset-and-liability items of all Sixth District member banks on the last Wednesday of each month is now available for persons interested in following banking changes in the District. The data are broken down between reserve-city banks and other member banks. Requests should be addressed to the Research Department of this bank.

Bank Announcements

Two banks were added to the Federal Reserve Par List during July. The first of these was the Covington County Bank, Andalusia, Alabama, a nonmember bank which began remitting at par on July 5. It has capital stock of \$100,000 and surplus and undivided profits of \$70,000. Charles Dixon is president, J. S. Herlong is executive vice president, and L. R. Deal is cashier.

The second addition to the Par List was the Citizens Bank, LaFayette, Tennessee, a nonmember bank in the Nashville branch territory. This bank began remitting at par on July 15. Its capital stock amounts to \$50,000, its surplus and undivided profits to \$33,000, and its deposits to \$2,310,000. The president is A. W. Jenkins, and the vice president and cashier is William Parker. The two assistant cashiers are L. C. Parker and Howard A. Smith.

Sixth District Statistics

INSTALMENT CASH LOANS					
Lender	Number Reporting	Volume		Outstandings	
		Percent Change June 1947 from		Percent Change June 30, 1947 from	
		May 1947	June 1946	May 1947	June 1946
Federal credit unions.....	44	+ 12	+ 72	+ 8	+ 62
State credit unions.....	25	— 26	+ 17	+ 6	+ 50
Industrial banking companies.....	11	— 4	— 5	+ 1	+ 30
Industrial loan companies.....	24	— 1	+ 39	— 2	+ 30
Small loan companies.....	53	— 0	+ 19	+ 1	+ 21
Commercial banks.....	34	+ 6	+ 74	+ 6	+ 84

DEPARTMENT STORE SALES AND STOCKS					
Place	No. of Stores Reporting	Sales		INVENTORIES	
		Percent Change June 1947 from		Percent Change June 30, 1947 from	
		May 1947	June 1946	May 31 1947	June 30 1946
ALABAMA					
Birmingham.....	5	— 19	+ 4	4	— 6
Mobile.....	5	— 11	+ 13	..	..
Montgomery.....	3	— 15	+ 10	3	— 5
FLORIDA					
Jacksonville.....	4	— 17	— 7	3	— 10
Miami.....	4	— 12	+ 9	3	— 4
Orlando.....	3	— 16	+ 4	..	..
Tampa.....	5	— 14	+ 4	3	— 5
GEORGIA					
Atlanta.....	6	— 21	— 4	5	— 4
Augusta.....	4	— 18	+ 4	3	— 11
Columbus.....	3	— 22	+ 7	..	..
Macon.....	4	— 22	— 12	4	— 8
LOUISIANA					
Baton Rouge.....	4	— 19	+ 1	4	— 7
New Orleans.....	5	— 12	+ 6	4	— 9
MISSISSIPPI					
Jackson.....	4	— 15	— 5	4	— 10
TENNESSEE					
Bristol.....	3	— 23	+ 4	3	— 9
Chattanooga.....	4	— 25	+ 13	3	— 5
Knoxville.....	4	— 30	— 21	..	..
Nashville.....	6	— 27	— 7	5	— 2
OTHER CITIES*	18	— 19	+ 2	22	— 3
DISTRICT	94	— 19	— 1	73	— 6

* When fewer than 3 stores report in a given city, the sales or stocks are grouped together under "other cities."

In June cash sales at department stores, for example, were down 14 percent from those of June 1946. Open-credit sales were up 4 percent and instalment sales 71 percent. Furniture stores sold 18 percent less for cash and 15 percent more on credit, and their total sales increased 7 percent in dollar value. Jewelry-store total sales during the first half of 1947 were less than those of the corresponding period of last year. Had it not been for the 30-percent increase in June credit sales over the 1946 level, total sales for June would have declined even more than the 2 percent they did.

The retailers' balance sheets have consequently shown a marked increase in accounts receivable. A period of expanding credit sales results in a greater month-to-month increase in the amount of accounts outstanding than it does in the amount of credit sales, because the accounts receivable outstanding at the end of any month include not only the credit sales made during that month but of the unpaid portion of those made during preceding periods. The cumulative result is shown in the reports of Sixth District department stores for June. For each \$1 increase in open-credit sales from June 1946 to June 1947 there was a \$20 increase in accounts receivable. Because they had not expanded their credit sales as rapidly, other types of stores had a smaller increase in accounts receivable. Even so, for every \$1 increase in credit sales during that 12-month period at the reporting jewelry stores there was an increase of \$2.83 in accounts receivable and at District reporting furniture stores an increase of \$4.25.

As long as current incomes are maintained, expansion in credit buying will probably continue. One thing helping it is the sales competition among the retailers. Recently newspaper advertising has emphasized relatively favorable credit terms. Once more consumers are being urged to use their charge accounts. They are also told that they can use instalment accounts to buy such things as tires, new clothes, and travel tours as well as so-called hard goods, such as furniture, household appliances, jewelry, and automobiles, which are customarily bought on the instalment plan.

In May a 250-million-dollar expansion in consumer credit outstanding in the United States brought the total at the end of the month to 10.7 billion dollars, approximately 550 million dollars more than the greatest prewar amount. Instalment credit amounted to almost 45 percent of total consumer credit. Of the total increase, 57 million dollars was in automobile instalment-sale credit, 53 million in other instalment-sale credit, and 58 million in charge-account credit.

Most retailers were able to carry their expanded accounts receivable through the end of 1946 without resort to bank borrowing. Any assistance they may have required from the banks since then has not been sufficient to increase the total of commercial and industrial loans. Sixth District member banks reporting their consumer-lending operations each month, have aided, however, in the expansion of consumer credit both by buying instalment paper and by lending directly to consumers specifically for the purchase of goods. Since the first of the year these instalment loans have grown about a third. Approximately two fifths of the total increase from December through June was in automobile-sale credit. A growth in this type of bank lending in the future is expected to take place as the retailers' cash positions are reduced and their accounts receivable are expanded.

C. T. T.