

air-raid victims in England. A van for distributing gifts of clothing has also been presented to the Women's Voluntary Services in London by Congo donors.

AMERICA JOINS IN

SINCE war came to the Pacific, the United States are more and more needing their share of Congo raw materials, and helping to supply machinery and other essential manufactures in return.

The next Congo Trade Agreement will probably be a three-party one, and at the time of writing (August 1942), the Belgian Prime Minister, M. Pierlot, the Colonial Minister, M. de Vleeschhauer, Mr. John Cadbury, of the Ministry of Food, Mr. Samuel Day, an American Government expert, and other British and U.S.A. representatives are all in Léopoldville to plan still further development of the Congo's war production and armed forces.

HISTORY REPEATS ITSELF

A Stout Ally in 1914 and 1941

In this story we have just outlined of the Congo's value as an ally, history is only repeating itself, though on a larger scale.

In 1914-18, as the following figures will show, the Congo mining and smelting industries were very small when compared with their present giant stature, but they made the same great effort they are making today to expand their output in order to keep the Allied war machine fully supplied:

FINANCIAL EFFORT

FIGHTER FUNDS AND WAR RELIEF FUND

As in England, so in the Congo, those who are not called upon to take up arms are giving back a generous part of their earnings to war funds.

Up to the end of 1941, the "Fonds Colonial des Œuvres de Guerre" (Colonial War Relief Fund) had reached 26 million francs (£148,000), and the various Fighter Funds over 44 million (£250,000), of which 4 million francs was given by natives.

When we remember that there are scarcely 30,000 whites in the Congo, and that the money income of the Congolese is insignificant, these sums are seen to be remarkable.

At a ceremonial parade held in Léopoldville recently, a cheque for the quarter of a million sterling was handed to the British Consul-General for remittance to London. This sum is going to the purchase of a squadron of forty-eight Spitfires, which will be manned entirely by Belgian pilots serving in the R.A.F. Each machine will be known by some name famous in the history of the Belgian Congo.

Some of these Spitfires have already gone into action, and the pilot of one of them has just had the distinction of shooting down a Focke-Wulf 190, the Nazis' newest and most dangerous fighter-bomber. This has rarely been encountered yet, but has quickly come to be considered a formidable opponent.

The Colonial War Relief Fund not only helps Belgian prisoners in Germany, sends food parcels to under-nourished families in Belgium, and contributes to the welfare of Belgian refugees in various countries. A large part of the Fund goes to Belgium's allies; for example, the Lord Mayor has received several cheques from the Fund for assistance to

PALM OIL AND PALM KERNEL OIL		Tons
United Kingdom imports from Belgian Congo in 1914	150	
" " " " " "	1916	2,900
Belgian Congo agreed <i>minimum</i> supplies to United Kingdom for 1942		25,000

COPAL		Tons
United Kingdom imports from Belgian Congo in 1914	850	
" " " " " "	1916	6,200
Belgian Congo agreed <i>minimum</i> supplies to U.K. for 1942		7,000

In the two years from 1914 to 1916, the Belgian colonists doubled their output of copper, gold, diamonds and palm oil, and trebled that of palm kernels. During the whole course of the first World War they provided Great Britain and Ireland with more than half their supplies of copal, and around 5 per cent. of their copper, palm kernels, palm oil and rubber.

Similarly in the military sphere, General Gilliaert's forces, victors of Asosa and Saïo in the Abyssinian campaign of 1941, had their forerunners in the Congo armies of 1916, which did a great deal to put an end to German power in East Africa. Between April and June of that year they drove the enemy from the provinces of Ruanda and Urundi, which were subsequently awarded to Belgium under mandate of the League of Nations, and are now adding their quota to the Congo's supplies of tin, gold, silver, rare-earth metals, and tropical produce. Subsequently, in naval operations on Lake Tanganyika, and a brilliant campaign culminating in the capture of Tabora in September 1916, they materially helped Great Britain to wrest from Germany what is now Tanganyika Territory.

COPPER		Tons
United Kingdom imports from Belgian Congo in 1914	3,766	
" " " " " "	1916	13,178
Belgian Congo agreed <i>minimum</i> supplies to United Kingdom for 1942		144,000

DIAMONDS (mainly industrial)		Carats
Congo production, 1914		24,000
" " " "	1916	58,300
" " " "	1940 (provisional figure)	10,900,000

GOLD		Kilogrammes
Congo production, 1914		1,721
" " " "	1916	3,296
" " " "	1941	19,219

Turning to vegetable products, we see the same great increase in Congo production during the last war, and the same immensely higher starting-points from which a similar ascent is being made today:

PALM KERNELS

United Kingdom imports from Belgian Congo in 1914		Tons
" " " " " "	1916	16,328
Belgian Congo anticipated exports to United Kingdom for 1942		50,000

THE CONGO'S RESOURCES AND THEIR USE IN WAR

What are the Congo's resources in the materials which have so far been called for by the British Government, and to what use will they be put?

GOLD

The importance of gold during the first phase of the war needs no emphasis. By keeping up the rate of sterling on the international market, it influenced supplies of every finished weapon or raw material of war which Great Britain needed to import, and so was itself regarded as a prime weapon.

The Congo is the twelfth gold-producing country in the world. There are more than twenty gold-mining companies, owning seventy mines, the chief being those of the Société des Mines d'Or de Kilo-Moto. Several hundred million francs are invested in the industry, of which 230 million are accounted for by the Kilo-Moto mines. Approximately half the gold produced in the Congo comes from these mines (8,700 kilogrammes out of a total of 18,000 in 1939), and a large part from the Compagnie Minière des Grands Lacs Africains (3,100 kilogrammes in 1939). Together with the Minière de la Tele company, these mines produce about 80 per cent. of the total Congo output. Remaining deposits are estimated at 100,000 kilogrammes. In peacetime, output of gold was carefully controlled by the directors of the principal Congo companies, to avoid any sudden expansion or contraction that might upset the bullion market or lead to undesirable speculation on the stock exchanges. The aim was a moderately but smoothly rising curve of returns.

In the period of American and Japanese neutrality, the Congo Government called upon the companies to abandon this policy completely in favour of maximum output. It was computed that without importing new plant, output could be raised by at least 15 per cent., and we may suppose that this was wholly or partly achieved during 1941, though no figures have been published. As already described, the changing world situation has put an end to the drive for gold, and priority is now given to tin and copper.

COPPER

During the past few years the Congo has supplied about 6 per cent. of the world's output of copper (production in 1938 and 1939, 124,000 and 120,000 metric tons respectively, out of world totals of 1,982,000 and 2,200,000). Exports were 122,000 tons in 1939 and 160,000 tons in 1938. This is no measure of what the Congo mines can contribute to the Allied war-chest if need be, for production has been restricted under the Copper Producers' Association agreements. In 1939 the potential annual output of Congo copper was estimated at 230,000 tons.

The entire production of this metal in the Belgian colonies is controlled by the Union Minière du Haut Katanga, a great company with a capital of 300 million francs. Their main concession is some two hundred miles long by thirty broad, and still appears to contain over $4\frac{1}{2}$ million tons of copper deposits. These vast reserves are surpassed only by those of the Chile company, the Kennecott Corporation in the United States, and perhaps one or two Rhodesian producers. The two biggest mines, named Prince Leopold and Kambove, are equipped with electric mining gear and automatic decaging machinery. One of the great mechanical navvies will scoop out more than two cubic yards of ore

at one bite. With the aid of twenty men, it will do the work of two hundred. The ore goes to several centres in the Congo itself for treatment.

The works at Jadotville can handle 100,000 tons of ore per month by the mechanical concentration process, turning out concentrates with 35 per cent. copper content. There is also complete washing, drying, crushing and electrolytic plant for producing pure copper in cathode form, and electric furnaces specially designed to produce copper-cobalt-iron alloys direct from an ore in which all three metals are present. In 1938, 3,600 tons of white cobalt alloy and 1,400 of red were produced.

Cobalt being of the utmost importance in armament work for incorporation in high-duty alloys, a special effort has been made to increase production, and in spite of all wartime difficulties, new works were recently completed at Koiwezi, an obscure village which has suddenly become a modern town. The new smelter is designed to handle up to 40,000 tons of cobalt-bearing ore per annum.

The richest copper ore is treated at Lubumbashi in water-jacket furnaces. This plant can also deal with ores impregnated with sulphur.

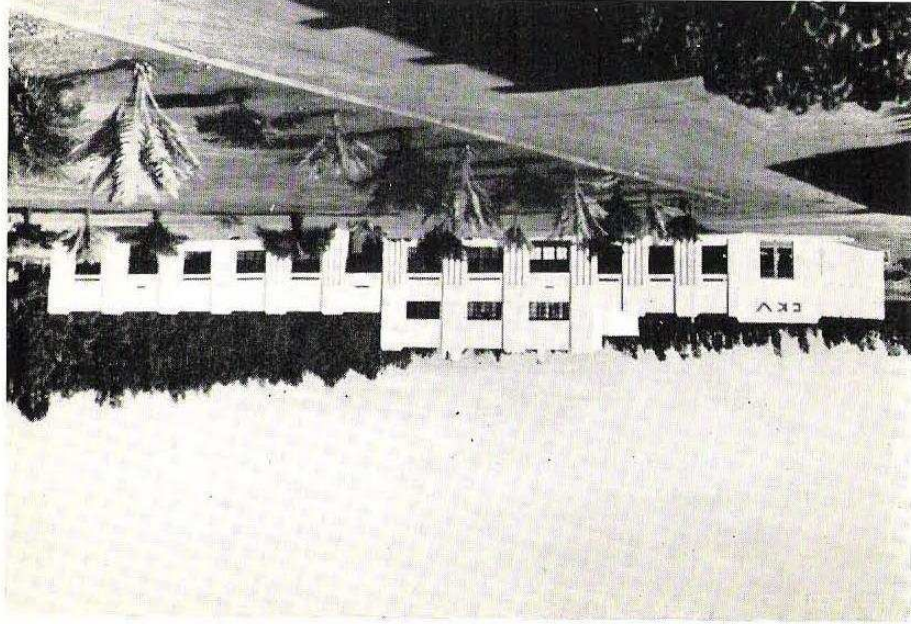
There is another concentrator at Kipushi, which treats part of the ore from Prince Leopold workings before passing it on to Lubumbashi.

The Congo is the fifth copper-producing country in the world. Fortunately the four leading ones (United States, Chile, Canada, Rhodesia) are also within the Allied orbit. In spite of this last fact, there will be a steady call on the copper resources of the Congo, so vast is the quantity of this metal consumed in wartime for armaments and all branches of electrical engineering, including radiolocation and radio communication with tanks and aircraft. The brass of shell-cases and the bronze much used in general engineering and shipbuilding are of course alloys of copper. The importance

A corner of the native city of Kinshasa adjoining Leopoldville.



Modern commercial buildings at Tsumbura.



of it was vividly expressed by Mr. Donald Nelson, head of the U.S.A. War Production Board:

“One type of bomber that is now defending our freedom requires more than two miles of copper wire to keep it flying. Another type of plane that we are using requires 500 lb. of copper. A battleship uses 2 million lb. of copper. If there were no copper, our big guns all over the world would be silent and helpless.”

As we have seen, the 1942 Agreement already calls for 16 per cent. more copper from the Congo than the previous one.

TIN ORE AND TIN

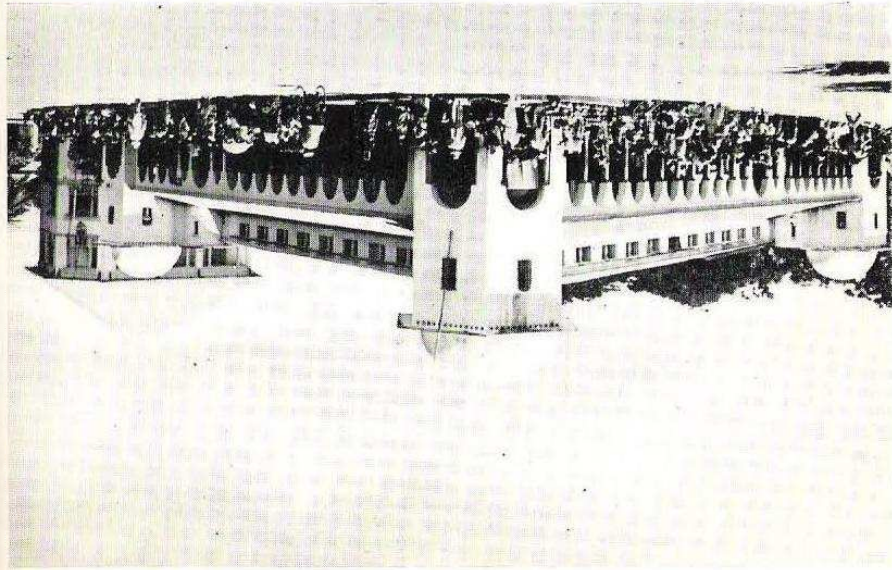
Tin has a thousand peacetime uses, chiefly because it is the only common metal which is both harmless and tasteless when left in constant contact with foods.

In war it is of prime importance for the production of bearing metals, and bronze, which enters so largely into shipbuilding and machinery. Normal users must consequently find substitutes. The vital need for tin in modern warfare is shown by the lengths to which Germany has gone in this direction. Thus the tin tubes which led from cellar to bar in the beer-houses of Germany have all been collected and replaced by a new alloy steel, which is said to be just as effective.

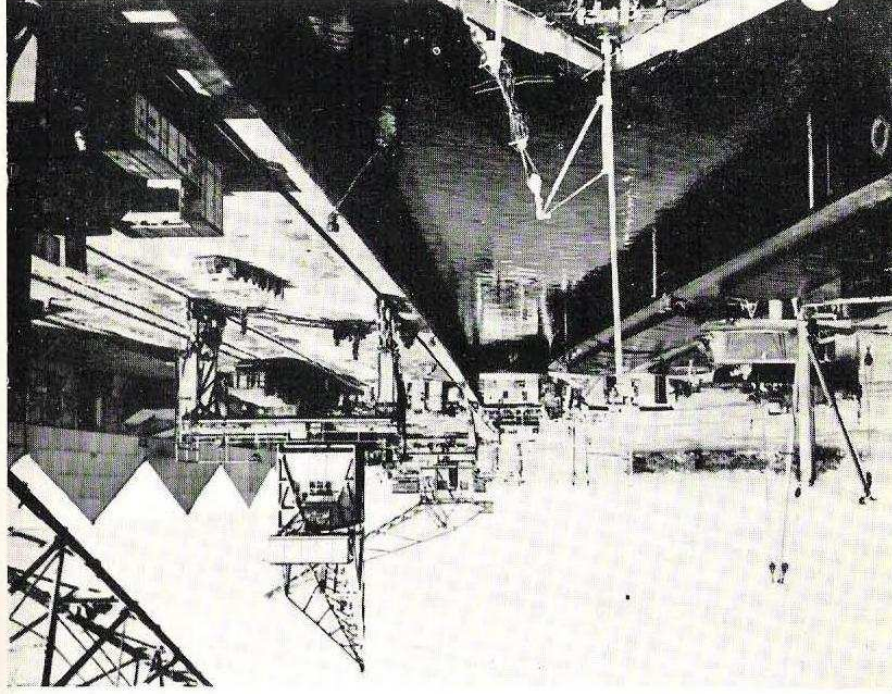
Even in normal times the Congo is the sixth producer of tin in the world, coming after Bolivia, Malaya, the Dutch East Indies, Nigeria and Siam. This fact becomes doubly important now that three of these areas are in Japanese hands.

The output of tin in the Congo is therefore being pushed to the maximum, with great success, for the country has already risen from sixth to second rank among world producers. In theory, the restrictions imposed by international agreement are still in force, but in fact the limit

3*—B.A.



The native market in Leopoldville.



Leopoldville: the port. Shipping at one of the quays.

In any case, it seems certain that in 1942 the Congo will provide one-quarter of the Allies' total supplies of tin, a very important contribution towards making good the serious loss incurred in the Far East.

TUNGSTEN (OR WOLFRAM) ORE

This metal has been largely used for lamp filaments, but still more important today is its incorporation in self-hardening high-speed tool steels.

Some 36 per cent. of the world's tungsten came from China, now almost cut off from the Allies. Another 20 per cent. was from Japanese colonies or Japanese-occupied countries. This is why the British Government has called for all the tungsten ore the Congo can produce.

In peacetime the output was very small, but it is hoped that when the question is one of filling a vital need of the Allied war factories, and not of competing with better-placed producers, more can be achieved.

RUBBER

Trees, creepers and shrubs yielding rubber grow wild in the Belgian Congo in great profusion. In the early days of the rubber industry, around 1900, up to 5,000 tons a year of wild rubber were exported from the Congo.

When later the vast plantations in the Dutch East Indies and British Malaya flooded the world with more rubber than the industry could absorb, there was little use for this wild rubber, and shipments fell to a few score tons a year. Now that Japan has robbed the Allies of the normal sources of more than 90 per cent. of the world's rubber, every pound of the wild product from the Congo will help to fill the dangerous gap in Allied supplies. Every ton will

keep forty vehicles on the road which might otherwise be laid up for lack of tyres. Everyone knows the thousand

for the Congo is being increased to keep pace with production capacity. Congo ore takes the form of exceptionally pure cassiterite, giving nearly three-quarters its weight of refined tin.

Before the war, much ore was exported and little tin, but ever since Belgium entered the war, the policy has been to smelt the highest possible proportion of ore on the spot. In the first year after the invasion, tin was more readily saleable for dollars than ore. This aspect no longer has to be considered, but the fact remains that tin naturally requires much less shipping space than the corresponding quantity of ore; also, by smelting in Africa, European workers can be released for more skilled tasks which could not be entrusted at present to Congolese labour.

New smelter plant has been built since May 1940, and extensions are still being made. The great effort put forth and its success are strikingly shown in the following figures:

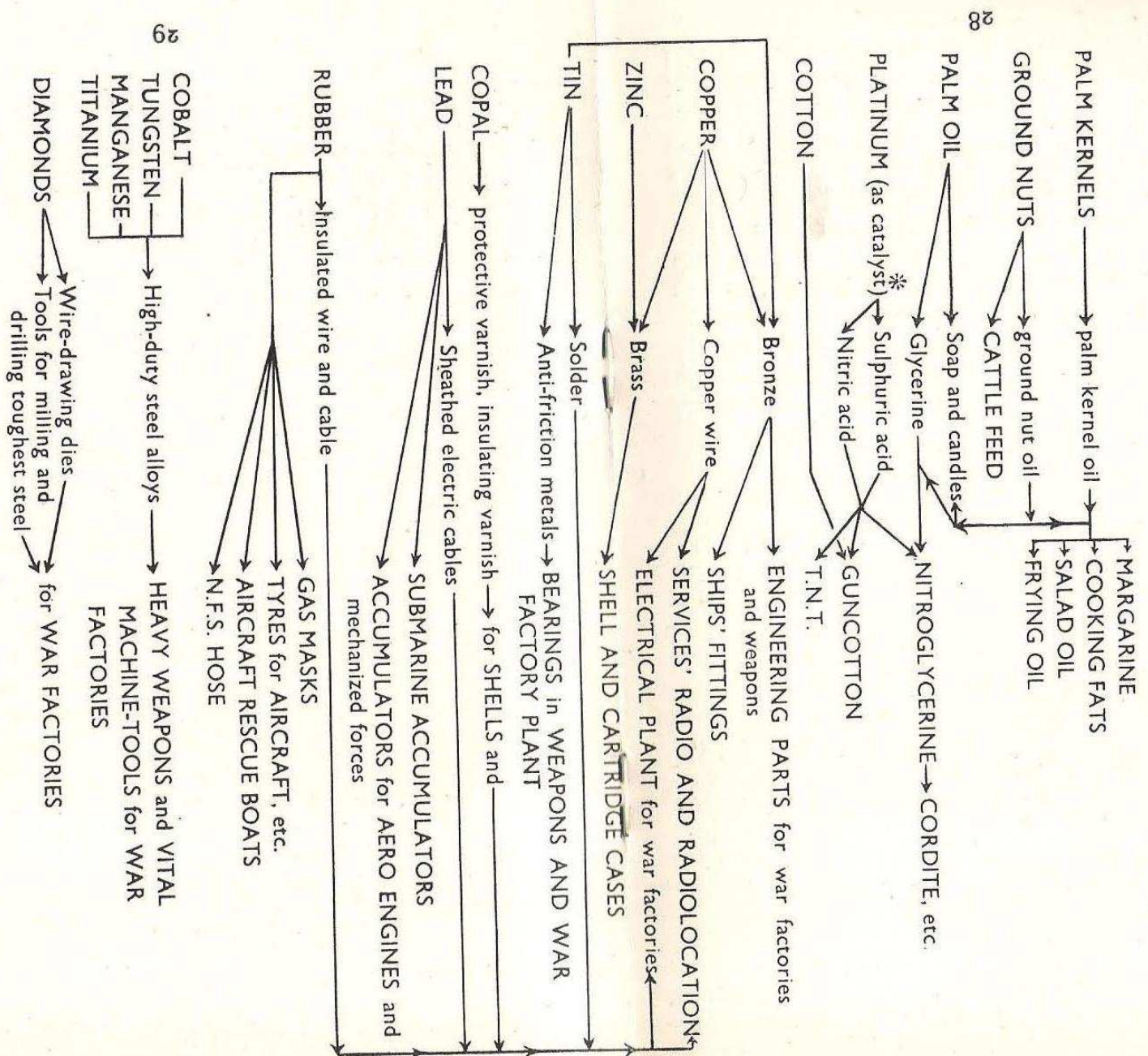
Exports of Tin Bars from the Belgian Congo

Year	Metric tons
1937	2,281
1938	1,813
1939	1,330
1940	9,732
September 1940	
to October 1941	18,000 (provisional figure)

Several companies have increased their output by 50 to 60 per cent., achieving this feat in spite of the fact that the Army has taken 30 to 40 per cent. of their European staff. It is hoped that the chief company's plans for raising their pre-war capacity of 8,000 tons to 20,000 will soon be completed, and will enable the Congo to double the 1940 figure.

HOW THE BELGIAN CONGO EQUIPS THE UNITED NATIONS FOR WAR

CONGO RAW MATERIALS —————> give VITAL FOODS & WEAPONS



* This use of platinum is now tending to disappear owing to the discovery that fused silica can serve the same purpose. Other uses of the metal are described in the text.

This is grown entirely by natives in their own fields, and bought by the cotton companies at prices fixed by the Colonial Government, which encourages planting and owns large research stations at which the finest Egyptian and American types of cotton are being acclimatised.

The crop has been steadily increasing over the past twelve years. In 1939 about 900,000 acres were under cotton, and some 120,000 tons were picked, giving about 40,000 tons of raw fibre after ginning. In 1940 and 1941 the figure was up again to 45,227 and 47,188 tons respectively, another notable success of the Congo's war effort.

Apart from the innumerable peacetime uses of cotton, which cannot be altogether abandoned, vast quantities are required in war for colonial service uniforms and for gun-cotton, cordite, and similar explosives: hence a campaign to encourage the natives to grow more, and hence the increase in British purchases from 20,000 to 30,000 tons per annum already noted.

COTTON

COPAL

Copal is the chief constituent of various kinds of varnish and "dope." It is widely used in the armaments industry itself, and also in waterproofing, in electrical apparatus, and in the radio industry. The hard, semi-fossilized form of this gum is found buried deep in the mud brought down by the waterways at certain seasons of the year. At these times whole tribes of Congolese make great treks in search of it, and they succeed in collecting and selling to the traders up to 17,000 tons a year. In 1938, 15,000 tons were exported, and in 1939, 11,000.

So plentiful is this gum that in 1941 a special Export Regulation Committee was set up in the Congo to avoid unnecessary shipments that might have taken up space

other uses of rubber in peace and war, some of which are absolutely vital: gasmasks; N.F.S. and A.R.P. hose and pumps to fight fire-bombs; surgical equipment to save the lives of the wounded; collapsible boats for air rescue; water-proof canvas; electricity and radio.

Consequently a great campaign is being conducted to encourage the natives of the Congo to gather wild rubber, and the avenues of rubber trees planted round other crops to give shade are being tapped for the first time.

There are also European-owned plantations of Para rubber trees covering some 20,000 acres. For some years before the war, exports of plantation rubber only reached about 1,000 tons per annum owing to unfavourable markets, but when working at full pressure the area mentioned should now yield between 1,500 and 2,000 tons. The output of the trees increases gradually, being trebled between the first and eighth years of bearing. On the other hand, it takes five or six years for new plantations to come into bearing; hence the great importance of wild sources and of tapping shelter-trees.

A further supply may be obtained by reopening old plantations which were abandoned when the rubber market collapsed in 1922. In many cases these have been swallowed up in the jungle and there is no record of them, but an appeal has been made to all planters, missionaries, and Colonial Government officers to watch for them on their cross-country journeys, and report any finds to the authorities at once.

Plans were fortunately started four years ago to assist natives in setting out 25,000 acres of rubber plantations of their own. In case of a protracted war we may therefore hope to see the Congo later making good anything from 5 to 10 per cent. of the 100,000 tons of rubber for which England relied, in 1939, on countries now occupied by Japan.