

The Gum Copal Industry in Tanganyika

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## Introduction

Gum copal, ivory and slaves are frequently listed as major exports from <sup>the</sup> East African coast in the nineteenth century. The famed Tippu Tip himself was reported as dealing in the trading of copal from the age of twelve onwards, this would have been early in the 1800s, (Whitely 1959). Much attention has been given to trade in ~~the~~ ivory and slaves (e.g. Alpers 1974, Ejeknans 1970), but few people know of the exact nature of gum copal, let alone the details of its trade!

Copal is a hard gum-like resin or anine derived from plant ~~species~~ species. Several trees yield a resin known to the trade as copal: Agathis, pines from south East Asia and New Zealand; Symplocos, legumes from South America, Asia and Africa; and Guibourtia from the East African coast. The gum itself has been called by a variety of names: ~~the~~ gum copal, gum anini, copal, Zanzibar copal etc. It was formerly exported for use in the manufacture of high grade varnishes and as an adhesive. It should not be confused with gum arabic which is mucilaginous, is derived from Acacia trees principally Acacia senegal, and is used for making confectionary. There was also an export trade from Tanzania in the first part of the century, principally from Dodoma and Shinyanga areas. Sudan and countries of the Sahel are now the principal producers.

Gum copal in East Africa comes from a tall tree of coastal forests called Symnasea verrucosa (previously Trachylobium verrucosum) or Mtandarusi (Mtandarusi) in Swahili. Guibourtia schliebenii is much more poorly known, having been recorded infrequently from Lindi, Kilwa and Ulanga districts; its gum is used as <sup>a</sup> local glue.

#### The Gum Copal Tree 4

Mtandarusi is distributed along the coast of East Africa from Kilifi in Kenya to Northern Mozambique, and on the islands of Mafia, Zanzibar, Mauritius, Malagasy and Seychelles. It is found from ~~1000~~ <sup>altitude</sup> sea level to 240 m ~~above~~ <sup>altitude</sup> sea level in coastal evergreen forest and wetter woodlands. The tree was described in some detail by Peter Greenway (1941) who was a botanist in Tanzania from 1928 to the mid 1970s. It grows to 20 m in height, has a white smooth bark, and the timber is of some use as a hardwood for simple joinery.

The tree is very much rarer today than it used to be, as so much land in the coastal districts has been cleared for cultivation. Gray (1952) describing the development of Dar es Salaam, notes the clearing of land of gum ~~tree~~ copal trees for the sultan's coconut plantations in the 1970s. Greenway (1938), rewritten by Rodgers et al (1983), describes a forest on Mafia which was dominated by Mtandarusi. This forest, the only wet forest on the island, was finally cleared for coconuts in 1978-1980. (Mtandarusi trees are still commonly seen in Kilindoni town on Mafia, but Greenway suggested these were planted in German times). A similar relict forest exists on the coast at

Dendene just north of Kisiju ( $39^{\circ} 20'E$ ,  $7^{\circ} 25'S$ ) where it is partially protected by tidal mangrove creeks. This forest area of 250 hectares badly needs reserve status, as not only does it <sup>protect</sup> ~~afford~~ one of the last examples of what most of the coast would have looked like before the advent of agricultural mankind, but it <sup>also</sup> shows how a major part of Tanzania's earliest economy used to operate!

Apart from these sites, the tree is scattered, <sup>no</sup> ~~where~~ dominant, and rarely exceeding 15 m. The Liwale District Book <sup>mentions</sup> ~~records~~ a dense stand at Muhamivi or Kitope forest along the Liwale-Kilwa border in what has been <sup>the</sup> Selous Game Reserve since 1947, but my questioning past residents from that area, as well as botanical exploration, <sup>my own</sup> suggests the Mtendarusi has long gone. The District Book gives a figure of 2-3000 people engaged in gum copal collection ~~per~~ per year (1933 and 1934) in this one forest alone. Little wonder then that the tree has become scarce!

#### Obtaining the Gum

There are two ways of obtaining the gum, ~~but~~ both lead to a slightly different product. Firstly the live trunk <sup>and</sup> branches of the tree can be cut into, allowing the gum to ooze out; the gum can then be pulled or chipped off when dry and brittle. This yields an inferior form of gum, properly known as gum copal. A better and more valuable gum, known as gum animi, is really a fossil or semi-fossil gum exudate from the tree's roots. This has to be dug up, either from around the base of a live tree, or in sites where trees have been known to have occurred in the past. I obtained a piece from

Kisiju, which is 25 cm in length and weighs 0.6 kg (see photo 2).

or did not!  
Maggie like it

This fossil gum is an orange colour and is similar in nature to the amber of Europe. Like amber it can trap insects and keep them preserved for ever!

Tapping or cutting for gum can be injurious and cause death to the tree if not done properly. The forestry department was beginning to experiment with methods of sustained gum yield just before the world market demand fell and stopped further activity.

The Forest Ordinance of 1921 listed Mtandarusi as a "protected tree", and gum copal a "protected product". This meant that in theory ~~at least~~, no person could exploit the gum from any tree without a written permit from forest or administrative officers. This permit was granted free. Permit numbers for two years were as follows:

<u>District</u>	<u>1932</u>	<u>1933</u>
Bagamoyo	291	330
Dar es Salaam	302	296
Rufiji Delta (Salale)	26	31
Kilwa	Nil	Nil.

Note that Kilwa was exporting much copal at this time, no one was enforcing the regulation!

### The Gum Copal Trade

Trade in copal predates the advent of European administration on the East African Coast. Zanzibar was an important market centre long before the development of Dar es Salaam, <sup>but</sup> the many descriptions of Kilwa found in TNR make no mention of the trade in copal prior to the 1900s. <sup>a</sup> In 1839 the Sultan of Zanzibar concluded trade agreement with Britain, and later with France and Germany, in which he specifically reserved for himself a monopoly and the exclusive privilege of sale of ivory and gum copal (Gray 1952). ~~The copal~~ Jiddawi (1951) describes the <sup>accounts</sup> ~~accounts~~ of a Zanzibari merchant, and mentions a relative of the Sultan leaving Zanzibar with 71 boxes of copal in 1839.

Kisiju ~~ptm~~ in the last century was a major copal purchasing and collecting centre. <sup>Ellon</sup> (1879) commented on the great trade in copal on the mainland behind Kwale Island and ~~the~~ Kitungao (igao) <sup>was</sup> ~~as a principal station~~. The tree grows to the border of the creek and digging operations commence from the outskirts of the village itself. Parties from neighbouring tribes come to and fro and barter almost hourly (see also Gray 1958).

The following export figures (in tonnes per annum) for the years 1877 to 1883 were listed by the German Consul in Zanzibar:

1877	78	79	80	81	82	83
11 tonnes	26	48	58	83	108	138

It is interesting to note that figures are comparable to Dar es Salaam <sup>the exports from</sup> ~~the~~ exports from the next century. <sup>in the 1900s</sup>

Copal was not used by local people and so all production was for barter and trade. In German times, copal <sup>and</sup> ~~the~~ wild rubber latex (Landolphia and Saba species) were acceptable currency for the payment of tax (Rodgers 1976). The Liwale District Book remarks on the universal knowledge of copal extraction amongst residents and suggests the trade is a very old one indeed.

<sup>in the early 19th century</sup>  
The Forestry Department stated that the industry was small and quantities varied greatly. The trade was "unorganised with scattered haphazard collection over wide areas of the coast, which makes control difficult, and a great deal of damage to the tree population was done by injurious methods of tapping."

This concern over trees dealt was severe enough for the German administration to prohibit the export of gum copal <sup>from</sup> ~~of~~ Mafia; <sup>this</sup> was presumably to prevent further damage to the <sup>tree</sup> population. The prohibition was maintained by the British until the late 1930s.

Copal was collected by individuals and brought to market, where it was sold or auctioned openly. From there it was taken to Dar es Salaam; cleaned, sorted and prepared for export by one of the principal firms of exporters (e.g. Dalgety, Smith Mackenzie, Baumann, etc.). All the gum copal went to Europe, over half going to the United Kingdom.

In 1932 the Forest Department stated that the trade was purely a local one and that no government tax or duty or revenue was obtained, either at the permit, sale or export stage. The Department asked Government to fix a forest royalty on the grounds that the Department spends money on protecting the trees and finding better methods of to tap the gum. They suggested a rate of 25.25 per export ton which is about 5% of the average export price of 260 per ton. Prices varied from year to year and for quality, in that large pieces of red fossil gum fetched up to 3 times that of fresh exudate. Government turned down the request due to the drop in exports over the past few years.

Table 1 illustrates the annual export figures for all of Tanganyika from 1920 to 1964. Prices dropped during the 1930s recession, but otherwise remained fairly constant throughout this period. Table 2 shows occasional data for district production, and Table 3 shows the price paid to peasant producers in Bagamoyo in the 1930s. It is of interest to note that local sellers in district markets were getting two thirds of the full export price. This compares very favourably with the much greater price differential between peasant producer and parastatal exporters for agricultural produce today!

From the 1930s onwards copal demand lessened as the world switched to cheaper cellulose base paints and did not need high quality copal varnishes. The new paints did however still use a



small proportion of copal. But in the 1960s demand dropped off, trees became scarcer and the producer price, which could still be only some 30-50 cents per kilo was no longer as attractive as it was ten or twenty years ago.

So one of East African first exports came to an end. It played a major role in early economies, particularly at the family, or district level, but was never a major export earner at the national level. This paper has briefly described the tree, the product and the trade. It leaves almost totally unsearched the story of copal from the last century, when it was an even greater export commodity, and it leaves alone the involvement of the individual villager. How did they use copal as the first cash crop? These topics require the inputs of social historians not those of resource ecologists!

Much of this information was called from the files of the gum industry in the National Archives and from the District Books of Tanzania. I am grateful to Jacob Lobo who searched them so diligently. I am also indebted to a little old lady from Kisiju, who would not give me her name but did help me find an amazing piece of fossil copal. She is now engaged in cutting down what is perhaps the last pure mtandarusi forest in Tanzania.

Since this paper was written I have learnt of a new interest in gum copal, ~~as~~ and its possible value as an ingredient in stencil ink. Brief surveys in Bagamoyo District have shown that there are still copal resources and people who know how to exploit them. It is to be hoped that the Forest Division will take steps to regulate the level.

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TABLE 1. EXPORT VALUE OF GUM COPAL, UANGANYIKA, 1920 - 1964

YEAR	TONS	PRICE £	VALUE £	YEAR	TONS	PRICE £	VALUE £
1920	101	70	7111	1945	40	86	3433
1921	103	62	6374	46	376	77	29095
1922	140	66	9274	47	187	85	15837
1923	168	74	12426	48	75	74	5570
1924	157	95	14571	49	118	45	5351
1925	159	92	14612	19 50	110	80	8823
1926	167	87	144490	51	99	84	8299
1927	177	69	12265	52	-	-	-
1928	149	62	9167	53	39	54	2122
1930	85	67	5691	55	75	70	5218
1931	100	61	6143	56	50	63	3128
1932	55	60	3325	57	43	60	2583
1933	104	50	5175	58	13	79	1029
1934	84	45	3583	59	13	70	906
1935	73	37	2696	60	59	64	3780
1936	63	30	1869	61	20	64	1282
1937	24	28	666	62	33	66	2192
1938	34	28	940	63	3	50	150
1939	19	27	517	19 64	-	-	-
1940	18	40	716				
1941	17	47	806				
1942	73	75	5465				
1943	82	91	7429				
1944	197	105	20603				

TABLE 2 DISTRICT PRODUCTION OF GUM COPAL, TANGANYIKA

YEAR	RUFJI DISTRICT	KILWA DISTRICT
	(Tons)	(Tons)
1921	12	
1922	19	
1923	13	39
1924	28	48
1925	30	50
1926	72	60
1927	7	35
1928	6	31
1929	13	31
1930	4	24
1931	2	31
1932	3	16
1933	9	34
1934	51	
1935	5	
1936	6	

TABLE 2. (Continued)

YEAR	BAGAMOYO DISTRICT	KISARAWA DISTRICT
	(Tons)	(Tons)
1943		76
1944	5	60
1945	11	16
1946	11	45
1947	7	40
1948	1	19
1949	1	15
1950	6	12
1951	6	13
1952	2	3
1953	3	

TABLE 3. PEASANT PRODUCER PRICE, Bagamoyo.

YEAR	TONS SOLD	PRICE PER Kg.	EXPORT VALUE PER Kg.
1936	7	45 cts.	60 cts
1937	6	42 cts.	56 cts.
1938	3	47 cts.	56 cts.
1939	2	30 cts.	54 cts.