



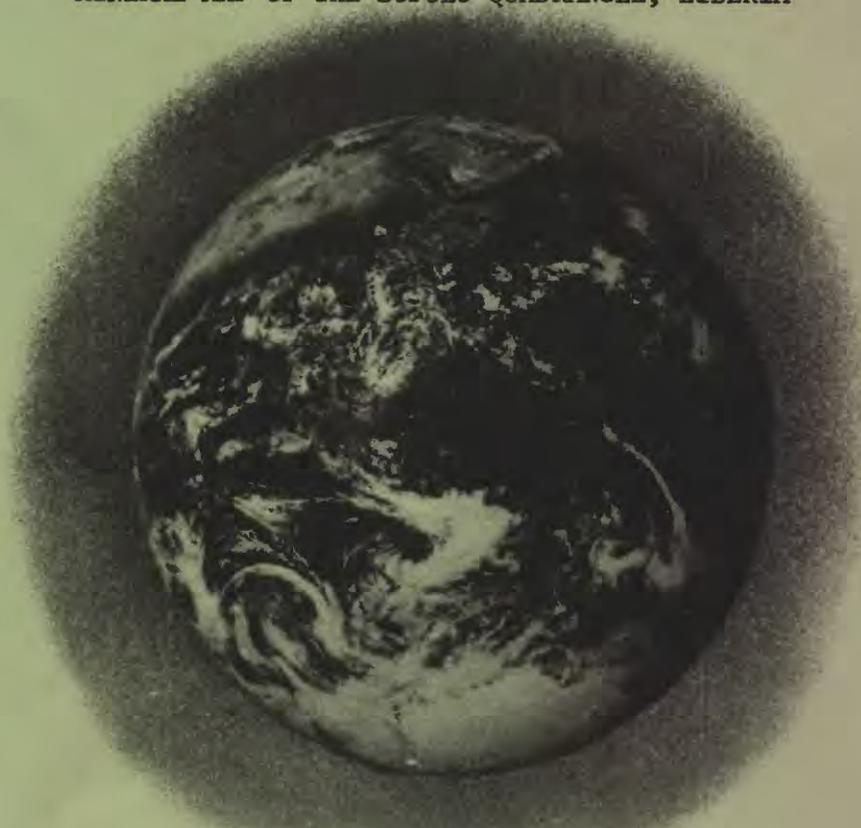
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MINERAL MAP OF THE BOPOLU QUADRANGLE, LIBERIA



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The project report series presents information resulting from various kind of scientific, technical, or administrative studies. Reports may be preliminary in scope, provide interim results in advance of publication, or may be final documents.

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## Mineral map of the Bopolu quadrangle

### INTRODUCTION

The mineral map of the Bopolu quadrangle is one of ten quadrangles covering Liberia (see index map) on which is compiled the mineral resources data gathered as part of the Liberian Geological Survey (LGS) and U.S. Geological Survey (USGS) cooperative Geological Exploration and Resources Appraisal (GERA) program during the period June 1965 through June 1972. The compilation is an inventory of the data indicating location of major and minor deposits. The source of information is presented in table 1 so that mineral-distribution patterns and existing knowledge may be analyzed and compared with data in the geographic, geologic, and geophysical maps of Liberia published in the USGS folio series. Also included are observations made by GERA project geologists and data from published and unpublished sources as indicated in the text and tables.

Mining areas and deposits are referenced to a nearby town or other geographic feature and further identified by number (in general, progressive from south to north) if the locality is described in the text or table 1. Most of the localities shown are accurate at 1:250,000 scale; however, some of the locations have been shown as uncertain though they have been plotted as closely as feasible from the available descriptions. With the assistance of local guides, it is generally possible to readily locate any area in the field where mining has been done in historic time, and, in many cases, the exact route of previous prospecting parties can be retraced.

Minerals produced from the Bopolu quadrangle include iron ore, diamonds, and gold.

## DIAMONDS

The Holland Syndicate explored much of Liberia during 1934-1935 and found both diamonds and kimberite in the Kungbo region (diamond locality 10) and noted the association of diamonds and magneto-ilmenite (Terpstra, 1937, p. 137; 1939). The Syndicate indicated (unpub. data, 1935) that 46 stones, total weight of about 12 carats, were recovered from some 40 prospect pits. Another unpublished source (Immink and Reilingh, 1951) documents recovery of three colorless diamonds having a total weight of 5-1/2 carats from near the mouth of Budulu Creed at Wuesua (6)<sup>1/</sup> as well as recovery by Johnny Bounds of 25 stones from 140 meters of the Creek at the same site in a sluicibox gold-placer operation during the period 1946 through 1950. News of the Wuesua diamonds spread in 1951, resulting in a "diamond rush" to the region and significant production shortly thereafter.

Further impetus was imparted to the Liberian diamond industry by St. Andrews Securities, Ltd.--Diamond Mining Corporation of Liberia (DMCL) field investigations during the period 1963 through mid-1966. Although several accounts of the DMCL activities have been published (Leuria, 1961 and 1966; Leuria and Stracke, 1964; Lawrence, 1965), the maps, text, and tables in unpublished quarterly, annual, and summary reports of DMCL supplied most of the diamond information and many of the other localities shown on this map.

1/ Numbers in parentheses refer to the same number in table 1.

The bulk of Liberian diamonds from the Bopolu quadrangle are won from the diamond placer areas indicated on the map and referenced in table 1. Most of the deposits are mined by hand methods and crude equipment is used to size and concentrate the diamondiferous material (Leuria and Stracke, 1964, p. 8-9). Mechanized recovery of diamonds from the Lofa River (3) ground running 0.84 carat per cubic yard is described by Stott-Cooper (1966).

Isolated diamond finds are shown where they are apparently anomalous relative to known sources. Inasmuch as diamonds are commonly dispersed over many kilometers of stream course (350 km in the Congo is cited by Leuria and Stracke, 1966, p. 6) and major drainage changes have taken place, the isolated diamonds are only meager clues in the search for new or undeveloped deposits.

The kimberlites noted in Liberia are mostly small dikes less than a meter thick but local "blows" (K8) have been identified. One known kimberlite crops out, the others were found by trenching following identification of indicator minerals and(or) diamonds. DMCL testing of kimberlites (localities K2 through K12) failed to indicate in situ diamonds in economic quantities. Table 1 lists the individual kimberlites that have been placed on the map.

Kimberlite indicator minerals, picro-ilmenite and(or) pyrope garnet, are generally abundant in the diamond-bearing gravels at or near the kimberlite sources. Indicator minerals found in areas distant from the known sources are symbolized on the map. The possible significance of similar showings of various indicator minerals relative to undiscovered sources of diamonds is described in detail for comparable areas in Sierra Leone by Hall (1972).

## GOLD

In Liberia, small quantities of gold were undoubtedly recovered from placer deposits and utilized for trade and ornamentation before written history. The Holland Syndicate undertook prospection of much of Liberia during 1934 and 1935 (Terpstra, 1937, 1939), and following their lead, a number of small, shallow, placer deposits were developed by local miners and partial records kept of production (Sherman, 1947, p. 19).

Thirty-seven gold placer mining areas and almost 200 placer localities have been identified in the Bopolu quadrangle. Many of the mining areas are mentioned by Sherman (1947) and some are described in considerable detail by Thayer and others (in press). References are cited in table 1 and locations are symbolized on the map.

Gold lodes have been identified at three localities, one of which was the site of shallow underground mining until shut down for safety reasons (Wuejua, L1). The lodes lie within a belt of gold placer deposits extending east-northeast from near the Sierra Leone border along the Bea and Kpo Ranges. Brief descriptions of the lodes are given in table 4 and locations are symbolized on the map.

## IRON ORE

Ancient slag piles, from the local smelting of lateritic duricrust iron ore for "country iron" (described for other areas in Liberia by Schulze, 1964, 1971), have been found in both the Bopolu and the Tawalata regions and probably are present many other places in the quadrangle. Duricrust ironstone is widespread. It has been derived from various kinds of iron-rich rocks and commonly contains about 55 percent Fe, mainly as goethite and hematite. Where the

concretionary duricrust has formed on oxide facies of iron formation, the grade may be as high as 65 percent Fe.

The Mano River mine of the National Iron Ore Company, located at the western edge of the country, commenced export of iron ore in late 1961 with reserves of about 53 million tons. The earthy, aluminous ore averages 55 percent iron before beneficiation. Wash-plant treatment yields lump and fines totaling about 4 million tons per year, most of which is shipped to Europe. Geology of the mine area is described by White and Baker (1968), and Johnson (1967) discusses general operations and Mano.

The highly magnetic itabirite in the Bea Range, approximately 25 km southeast of the Mano mine, was initially detected by a 1957 aeromagnetic survey made for the Liberia Mining Company (Bomi Hills mine). Subsequent exploration and testing work from 1959 through 1966 indicated that the unweathered itabirite has an average iron content of about 30 percent, weathered iron formation is enriched to an average of 44 percent iron, and canga crusts have an average iron content of 55 percent iron (Rehfeldt, 1967, p. 65). Although reserve figures have not been published, the Bea Range is considered one of the major undeveloped low-grade iron ore deposits in Liberia.

Itabirite crops out discontinuously in other places in the region around the Mano Mine and Bea Range and in the area between the Lofa River and the Kpo Range. The itabirite beds in these places are generally less than 10 meters thick. Iron content ranges from 25 to 45 percent. Zones of enriched ore-grade material are rare, but where known are too small to be considered for development.

## MISCELLANEOUS MINERAL LOCALITIES

Localities where possibly valuable minerals have been observed or reported are indicated on the map. Workable deposits of these minerals have not yet been found nor developed within the quadrangle, but the deposits, when related to geologic and geophysical data, could be of interest in future investigations. Comments and pertinent source data are given below:

Asbestos.--Small veinlets of cross-fiber chrysotile asbestos as much as 2 millimeters wide were found in ultramafic rock cropping out 18 kilometers west of Mania near the northern border of the quadrangle. Careful reconnaissance examination of the ultramafic bodies in the southwest part of the quadrangle (see geologic map I-772B) is warranted to determine whether asbestos is present in significant amounts.

Bauxite.--Fragments of bauxite are widespread as remnants of dissected deposits related to old erosion surfaces. Bauxite float has been reported at one locality near Jawajei Mavou in the southwest part of the quadrangle and at a place about 2 kilometers north of Domamana in the northern part adjacent to an area of subdued topography. A possible bauxite locality is indicated close to the Morro River (about 20 kilometers northeast of the Mano mine) on the basis of Wilson's report (1965, p. 44, 45, 63) of a plagioclase body in part capped with bauxite on the Sierra Leone side of the Moro River. If an unrecognized faulted extension of this syenitic rock underlies any of the highland remnant surface on the east side of the Morro, such an area would be a likely place to find bauxite.

The Jawahei locality is within the area of the coastal plain erosion surface of Pliocene age as described in Sierra Leone by Hall (1972, p. 29-31) and lies along the trend of the Sierra Leone bauxite deposits. Delineation of local remnants of other older, more highly dissected, surfaces at higher elevations, via aerial photography and field investigations, might disclose potentially significant deposits of bauxite in Liberia.

Chromitite.--In the central part of the quadrangle near the Morro River, a possible chromitite locality is shown. A prospector knowledgeable of the Sierra Leone deposits (see Wilson, 1965, p. 64-65) reported finding massive chromitite in this region, but this has not yet been confirmed.

Small grains of accessory chromite have been recognized in placer concentrates from many places in the quadrangle. Although unknown amounts of such chromite have been incorporated in the alluvial deposits, ultramafic rock sources of anomalous concentrations are worthy of investigation. In one tributary stream of the Gbeya River, accessory chromite proved to be a valid and easily used indicator mineral in locating one of the kimberlite areas (DMCL, unpub.). Many of the smaller bodies of ultramafic rock have been altered to talc and associated minerals. One locality near the northern edge of the quadrangle has small veinlets of asbestos. Platinum has been reported from two localities (see below).

Cinnabar.--Thayer and others (in press, table 2) report cinnabar in the heavy concentrates from two localities in Wuejua Creek near the East end of the Bea Range. Quicksilver was found too, but this was interpreted as losses from gold operations. Mercury minerals have not been recognized elsewhere in Liberia.

Columbite-tantalite.--Alluvial columbite-tantalite has been reported in many places (DMCL, unpub.) in the northern part of the quadrangle, and Thayer and others (in press, table 2) found several such localities in the southwestern part of the Bopulu quadrangle. Derivation from pegmatites is likely, but the actual source has not been confirmed. The Mania-Wahilahun region in the northeastern part of the quadrangle has a number of alluvial deposits in drainages from a relatively small area where the source should be easily identified.

Copper.--Native copper has been recognized in two diabase dikes in the region north of Bopulu. Similar copper-bearing dikes have been observed in both the Gbanka and Zorzor quadrangles and Wilson (1965, p. 31, 48, and tables 12 and 23) reports "copper" dolerite in adjacent Sierra Leone containing as much as 3/4 lb. of native copper per ton of dolerite. Minor chalcopyrite is present in the Sam Davis Creek sulfide-bearing quartz veins near Gondoja (Thayer and others, in press) and amphibolite with visible pyrite from Wuejua and Ndoblama assayed 0.20 percent and 0.25 percent copper, respectively (Leo, 1966, p. 2 and table 1). Sparse grains of copper minerals have been recognized in heavy-mineral samples from the region north of the Kpo Range.

Corundum.--Pieces of corundum weighing as much as 10 kilograms are locally found at or near the base of major drainage alluvial deposits, and granule-size pieces are almost universally present. Large pieces are usually well rounded, but in many areas the smaller fragments are angular. Gray is the most common color, pink and shades of blue-gray are frequently noted, and small fragments of ruby (red) and sapphire (blue) are sometime found, but there is no record of sizable pieces of gem-quality corundum being recovered in Liberia.

Although there is no known genetic association, diamond miners in Liberia (and Sierra Leone) consider corundum as a favorable "sample" or indicator mineral for diamonds. Because its durability and specific gravity (ca. 3.99) are close to that of diamond (3.52), corundum and diamond tend to concentrate together where they are in the same alluvial system. Thus, water-worn corundum does indicate alluvial concentrate material that could contain diamonds.

Bedrock sources of corundum in the alluvial deposits are not thoroughly established. Corundum gneiss (presumably with disseminated corundum) was found by DMCL geologists near the Morro River approximately 13 kilometers west of Bombahun. Thayer and others (in press, p. 82) reported finding a piece of corundum in a matrix of talc and amphibole in Wuejua Creek near the ultramafic rock outcrops in the Ndablama area. It is likely that the different varieties of corundum come from various types of aluminous, silica-deficient metamorphic rocks in Liberia.

Ilmenite.--Small (0.5 millimeter) grains of ordinary accessory ilmenite are common in many of the crystalline rocks in Liberia, and in western Liberia they are abundant in the alluvial heavy-mineral suite. Magnesian ilmenite (picro-ilmenite) is a common coarse-grained accessory in most of the kimberlites and therefore is a valuable indicator mineral for diamonds (outlying diamond indicator mineral localities are symbolized on the map). The ilmenite locality approximately 8 kilometers west of Bopolu, noted as having large ilmenite crystals, should be rechecked to determine if the crystals are picro-ilmenite. The presence of diamonds at nearby Bomba is suggestive of a kimberlite body in the vicinity.

Lead and zinc.--Terpstra (1937, p. 136) mentions the Holland Syndicate discovery of quartz veins carrying pyrite, galena, sphalerite, and other minerals at unspecified localities. Subsequent exploration by others along the Syndicate's route exposed small quartz veins containing sparse blebs of disseminated galena, sphalerite, pyrite, and chalcopyrite in the Sam Davis Creek area (about 1.5 kilometers northeast of Gondoja) and similar sulfides in cataclastic schist in the Galena Creek area 8 kilometers southwest of Tawalata (Johnson and others, 1968; Thayer and others, 1972). Galena was also noted in a heavy-mineral sample taken from an abandoned gold placer (6) on the north side of the Bea Range. These sulfide minerals are of interest as indicators of complex sulfide mineralization, but the estimated total sulfide content of 1 or 2 percent in the more strongly mineralized material (Johnson and others, 1968, p. 79) rules out economic consideration of the known localities.

Whether or not minable deposits may be related to them has not been thoroughly evaluated. Although reconnaissance geochemical sampling of stream sediments of the region in the course of a recent United Nations Mineral Survey (UNMS) project failed to indicate significant target areas of base-metal mineralization, a tighter sampling pattern along the Kpo Range and Bea Range trend seems warranted as gold is also found in a number of places in this belt.

Platinum.--Platinum with placer gold from the Golaila area is referred to in a unpublished report by T. Immink and A. Reilurgh (written commun., Jan. 22, 1951). They report that the so-called "Platinum Creek" tributary near Freeman's Camp (placer gold locality 32) carried platinum and gold in about equal amounts and that small quantities of platinum were recovered with the gold in many of the other creeks in the same general area.

Platinum metals in amount of 0.017 ounce per ton were detected by assay of mineralized rock from the Sam Davis Creek gold lode area (L2) where peridotite forms part of the terrain (Thayer and others, in press, Spec. 708, table 1). The closest known area where platinum has been commercially recovered is approximately 300 kilometers northwest near Freetown in Sierra Leone (Pollett, 1951, p. 21-22).

Rutile.--Rutile is almost omnipresent in small quantities in heavy-mineral concentrates taken throughout the Bopolu quadrangle. The locality indicated 3 kilometers north of Tawalata is characterized by coarse crystals comprising a large proportion of some of the heavy-concentrate samples.

Tungsten.--Although source rocks and associations are unknown, tungsten minerals have been recognized in several places. A fragment of wolframite supposedly came from the gold placer diggings (27) on Takpwa Creek (Thayer and others, 1972). The DMCL unpublished reports indicated scheelite in concentrates from the area 10 to 30 kilometers northeast of Wuesua, in the area along the Gbeya River northeast of Kungbo, and at two remote localities about 15 kilometers north of Gelahun.

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Table 1. Mineral localities of the Bopolu Quadrangle, Liberia

Locality No.	Area	Location name(s)	Source of data	Remarks
Diamonds (placer and other deposits)				
1	Matambo Creek area	Buxton's camp	Thayer & others (in press), ms P. 93, fig. 7	Thayer records that a Mr. Buxton reported a 32-carat green diamond in gold diggings at the margin of Matambo Creek prior to 1949.
2	Lower Mafa River	---	UNMS (unpub., 1972)	Source of placer diamonds in this area is unknown; possibly related to ancient drainage of the Cheya River.
3	Lower Lofa River	LISWIMCO concession	Leuria, 1966; Scott-Cooper, 1966	Mechanized operations on ground running 0.84 carat per cubic yard.
4	Mano Godua	---	UNMS (unpub., 1972)	Alluvial diamonds found at Mano Godua as early as 1949. Kimberlite source discovered by drilling of UNMS, 1972.
5	Yambasei Creek	---	S. P. Srivastava (unpub., 1966)	Source of diamonds in this area not known. Underfit stream and thick silt overburden suggest that valley is possibly an ancient course of the Lofa; however, other kimberlite bodies like the one at Mano Godua may be present beneath the overburden.
6	Bomba	---	D. Rossman and N. Jones (unpub., 1965)	Small deposit on tributary to the Mahe River is located beyond limits of major diamond fields and suggests probable local source.

Locality no.	Area	Location name(s)	Source of data	Remarks
7	Lofa River and Budulu Creek	Budulu Creek	Imink and Reilingh, (unpub.), 1951	Following reports of recovery of diamonds from a gold-placer operation in Budulu Creek at Wuesua in about 1950, the immediate area became a booming diamond camp. Subsequently work has extended along the course of the Lofa to the vicinity of the B. F. Goodrich plantation almost 100 kilometers downstream. Pro-duction has been from the river-channel deposits (by damming and excavation and by diving), from terrace deposits, and from deposits in tributary streams where terrace materials have been reconcentrated. There are small diamondiferous kimberlite dikes known in the vicinity of Wuesua (K2) that could be the source of at least a portion of the Lofa diamonds. Other undiscovered kimberlites could be present along the course of the Lofa.
8	Wuebani Creek area	Wea Bani, Musa Creek, Creek A, and Creek B	DMCL (unpub.)	Diamondiferous alluvial deposits extensively worked in this region following exploration by DMCL.
9	Morro River	Morro River	DMCL (unpub.); Hall (1972)	Potholes along the Morro River are periodically cleaned out in illicit mining. Values found are too low to encourage extensive mining activities.
10	Boaka Camp	Bwaki Camp Ed Gio Camp	DMCL (unpub.)	Extensive digging along creeks draining a probable kimberlite area (K10) along the Kungbo trend.
11	Kungbo	Kungbo Boma Dan Creek Edward Creek	de Groot (1935 unpub.) report of Holland Syndicate); Terpstra, 1937; 1939; DMCL (unpub.)	Extensive mining of stream alluvium and weathered kimberlite (see note on discovery of diamonds in this area, K12).

No.	Location Area	Reference name(s)	Source of data	Remarks
Kimberlite				
K1	Mano Godua		UNMS (unpub.)	Diamonds first found in 1949. Kimberlite discovered by United Nations Mineral Survey drilling operation in 1972. Southernmost kimberlite known in Liberia.
K2	Wuebine Creek Wuesua	Weasua F6/K1 F6/K2	DMCL (unpub.) Lib. Geol. Survey (unpub.)	Two small kimberlite dikes found by DMCL grid loaming work with sparse indicator minerals.
K3	Un-named tributary to Lofa River	Hieden F6/K3 F6/K4	DMCL (unpub.)	Do.
K4	Wuebani Creek	Tributary B/(Mano) Creek B	Do	Small diamondiferous kimberlite dike.
K5	Wuebani Creek	E5/K9 Musa Creek Creek A Wea Bani	Do	Kimberlite dike zone traced almost continuously for more than 4 kilometers. Extensive working of the alluvial deposits derived from this source.
K6			DMCL (unpub.)	Probable small kimberlite dike indicated by diamond-bearing samples.
K7	Cutuya Creek Wuetoma Creek areas	D5/K1,2; E5/K 13, -14,-15 and extensions; Wea Toma, Wea Lulu, and Cutuya Creeks	DMCL (unpub.)	Locally diamondiferous kimberlite dike swarm consisting of narrow dikes from a few centimeters to 60 centimeters wide where observed.
K8	Upper Cutuya Creek	Cutuya Creek	Lawrence, 1965, p. 2-3; DMCL (unpub.)	Crescent-shaped kimberlite body approximately 50 meters wide and more than 200 meters long contains very abundant picro-ilmenite.

No.	Location Area	Reference name(s)	Source of data	Remarks
K9		E5/K2,3,4 Sample Creek Upper Pa-my-yah	Lawrence, 1965, p. 2; DMCL (unpub.)	Northern body of kimberlite (E5/K2) is a "blow" measuring 450 by 75 meters. Washing of a number of cubic yards of material failed to indicate diamonds in significant quantities.
K10	Boaka Camp	Ed Gio Camp Bwaki Camp area	DMCL (unpub.)	Extensive diamond digging in the area and indicator minerals indicate a probable kimberlite body.
K11		Lower Kungbo Creek Mary Camp area	DMCL (unpub.)	Diamondiferous kimberlite dike 15 centimeters wide.
K12	Kungbo	E5/K5,10,11 Kungbo Boma Dan Creek Edward Creek	(de Groot (1935, unpubl. report of Holland Syndicate); Terpstra, 1937; 1939; DMCL (unpub.)	de Groot's placer deposit explorations in this region in 1934-1935 for the Holland Syndicate found 46 diamonds weighing a total of about 12 carats. DMCL work uncovered kimberlite source that can be traced for almost 8 kilometers.
K13	Galahun	E4/K1 Upper Morro River	Lawrence, 1965, p. 2; DMCL (unpub.)	Kimberlite dike 30 centimeters wide, no diamonds found. This dike was the first one located in Liberia by DMCL.

No.	Location Area	Reference Name(s)	Source of data	Remarks
Gold placer				
6	Ma Creek	Mambo	Sherman, 1947, p. 21	Gold observed in small tributaries to Ma Creek.
7	Matambo Creek	Bangona, Gogolmah	Sherman, 1947, p. 21 Thayer & others (in press), p. 58, 89-94, fig. 7	Former production from Matambo Creek and tributaries along both limits. Alluvium to depth of 3 meters in places, moderate gold values only in basal gravels.
8	Uncertain	Kangama Kangamah, Wiabassi Creek	Sherman, 1942, p. 11 Sherman, 1947, p. 21	Waibassi Creek (trib. Mafa) located about 1.6 kilometers east of Kangama. Another creek, near Togar, contains very fine gold.
9	Jawajei Mavou	Jawajei	Sherman, 1947, p. 22	Former placer operations on Mavo Creek and tributaries in area southwest of Jawajei Mavou.
10	Manogle	Manigole	Thayer & others (in press), p. 95-96.	Coarse gold found near base of hill, slope colluvium shows colors.
11		Gisi, Wiamangkangay Creek	Sherman, 1947, p. 22	In operation in 1941; adjacent creeks show colors.

No.	Location Area	Reference Name(s)	Source of data	Remarks
12	Uncertain	Webata Creek	Thayer & others (in press), Sample C632 in tables 2 and 3, pl. 1	Gold claims once held by Johnny Kru in area between Benduma and Gisi.
13	Uncertain	Konja and Goen Creeks	Sherman, 1942, p. 13; 1947, p. 21	Creeks reported equally distant from Bombo and Benduma.
14	Uncertain	Fono; Godiamah, Zimbgayeh, and Geyu tribes. to Lolia Creek.	Sherman, 1942 p. 12-13; 1947, p. 21	Area reported promising, but not rich.
15	Soso Camp		Liberian Geol. Survey (unpub.)	Small operation in 1966.
16	Uncertain	Biekinday Dumagbee Creek	Sherman, 1942, p. 12-13; 1947, p. 22	Coarse gold in shallow ground.
17	Weajua	Weaju	Sherman, 1942, p. 12; 1947, p. 22 Thayer & others (in press), ms 54, 58, 64, 83-89, fig. 5	One of more productive areas with workings along 1.2 kilometers of Weju Creek. Local rich pockets in upstream portions of creek; values in lower valley flat average 25 to 30 cents per cubic yard.

No.	Location area	Reference name(s)	Source of data	Remarks
18	Gohn Zolu	Gonzo	Sherman, 1942, p. 13; 1947, p. 22	High yield reported. Creek heads in same area of ultramafic rock as the Ndablama diggings (no. 14).
19	Ndablama	Yangaya Ndablama Watson Camp Duncan Camp Wuefua Creek	Sherman, 1942, p. 13; 1947, p. 22 Thayer & others (in press), ms p. 76, 78, 82-83, fig. 4	Wuefua Creek reported by Sherman (1942) as being the richest creek discovered in western Liberia. Minor activity at present time. Ultramafic rocks present in apparent source area. Thayer (in press, p. 73) reports the Wuefua as also containing tahtalite-columbite.
20	Biama Creek	Biama Creek	Thayer & others (in press), ms fig. 4, p. 83	Creek source area same as Ndablama (no. 14).
21	Gondoja	Gondojah	Sherman 1942, p. 13; 1947, p. 22 Thayer & others (in press), ms. p. 78-79, 81-82, fig. 4	Small, valley-flat placers near heads of small creeks; deposits lie along zone of quartz veins.
22	Sam Davlis Creek	Sam Davlis Creek	Thayer & others (in press), ms pl. 3, fig. 4, p. 77, 78-81	Small rich placer in zone of large quartz veins that contain base-metal sulfides.

No.	Location area	Reference name(s)	Source of data	Remarks
23	Tandila		D. Rossman (written commu. 1965)	Gold camp on the Kpo Range trend.
24	Uncertain	Gbangay Gbanga	Sherman, 1942, p. 15; 1947, p. 23	Reported discovery 1942.
25	Baisu		D. Rossman (written commu. 1965)	Gold camp 1.5 kilometers northeast of Baisu. Possibly the Gbanga (no. 19) discovery of 1942.
26	Watson Camp		Thayer & others (in press), fig. 8	Camp had been abandoned prior to Thayer and Lill traverse of Nov. 23, 1949.
27	Tawalata	Tawata Tarwata	Sherman, 1942, p. 14 1947, p. 22 Thayer & others (in press), ms p. 100-103, fig	Localities numbered 22 through 27 are commonly referred to as being in the Tawalata area.
28	Goakuehn	Camp 2 Waitumbe Creek	Thayer & others (in press), fig 8	The region was investigated by the Holland Syndicate in the 1930's, and deposits located
29		Southfork Waitumbe Creek	Thayer & others (in press), fig 8	were subsequently extensively worked, as reported by Thayer and others (in press).
30		Cole Camp Momowelle Waitumbe Creek	Thayer & others (in press), fig 8	Free gold has been found in small quartz veins (locality L3 reported under lode deposits). Minor disseminated galena has been found in sheared rocks along the east fork of Takpwa Creek, and wolframite float has been reported (Thayer & others, in press).

No.	Location area	Reference name(s)	Source of data	Remarks
31		Smith Camp	Thayer & others (in press), figure 8	Tributary to Takpwa Creek; drains ridge containing known gold lode (13).
32		Takpwa Creek Chilli Camp Kalli Camp Galena Creek	Thayer & others (in press), figure 8	Holland Syndicate investigations (reported by Thayer and others) indicated an average value of about 70¢ per cubic yard in Takpwa and Kalaya creeks based on explorations indicating 100 kilograms of gold in 140,000 cubic meters of alluvium.
33		Ross Camp Kalaya Creek	Thayer & others (in press), figure 8, p. 100-103.	
34	Gumbeta	Guma Creek	Sherman, 1942, p. 15; 1947, p. 23	Gold in Guma Creek below falls. Extent of workings unknown.
35	Uncertain, near Zelekai	Zilikai Silikai Bladay Gbuyeh Creek	Sherman, 1942, p. 15; 1947, p. 23	Area lies on remnant of old erosion surface below the steep southeast front of the Kpo Range. Bladay reported to be 1/2 hour walk from Zelekai.
36	Uncertain	Yeakpalla Yargan Creek	Sherman, 1942, p. 15; 1947, p. 23	Yargan Creek reported as tributary to Guma Creek located 2 hours walk from both Gumbeta and Zelekai.
37	Freeman's Camp	Boima Freeman Golella area	T. Imminck and A. Reilingh (IMC, 1951, written comm.); J. G. Richards (1953, written comm.); B. Cooper (written comm.)	Creeks approximately 6 kilometers northwest of Golella were mined for gold and platinum.

No.	Location area	Reference name(s)	Source of data	Remarks
38	Mitchell's Camp	Bobber Mitchell Golella area	T. Immlink and A. Reilingh (LMC, 1951, written commu.); J. G. Richards (1973, written commu.); B. Cooper (written commu.)  DMCL (unpub.)	Source area same as Freeman's Camp diggings; abundant columbite-tantalite and pyrite reported by Richards.
39	Unnamed		DMCL (unpub.)	Mined area on small gold-bearing tributary of the Lofa River (may have been mined for diamonds).
40	Uncertain	Foai	Sherman, 1947, p. 23	Locality reported on tributary to Lofa River, 3 1/2 hours walk from Zoi towards Tawalata.
41	Uncertain	Creek Weamortombo in Zoi area	Sherman, 1942, p. 14	Discovered shortly before 1942.
42	Unnamed		DMCL (unpub.)	Mining area approximately 8 kilometers north of Zoi.

No.	Area Name	Reference Name(s)	Source of data	Remarks
Gold Lodes				
L1	Wuejua	Wueju	Leo, 1966	Reconnaissance sampling of amphibolites and other country rock in the area indicated gold values ranging from "traces" to 0.79 gram per ton.
			Thayer & others (in press), ms P. 59, 64, 83-87, figures 5 and 6.	Free gold concentrated in small tourmaline-rich zones in schist. Two short tunnels cut discontinuous lenses locally yielding as much as \$100 per ton. Channel samples across minable widths assayed 0.20 to 0.55 oz. of gold per ton.
L2	Gondoja	Sam Davis Creek	Thayer & others (in press), ms P. 59, 61, 63, 66, 78-81, figure 4 and plate 3	Free gold with scattered grains of pyrite, galena, sphalerite, and chalcopyrite in lenticular quartz veins ranging from small stringers to almost 2 meters in thickness in mica schist and metamorphosed ultramafic rock.
L3	Tawalata	Tawalata District	Thayer & others (in press), ms P. 56, 59-62, 103-105	Free gold and minor pyrite in discontinuous quartz veins and stringers. Veins are 2 to 15 centimeters thick in ridge northeast of Kollie Camp and as much as 90 centimeters thick along Takpwa-Kalaya trough.