3-3-2 Result of Multi-variate Analysis

Correlation matrix among elements provided as a result of correlation analysis is shown in Table 2-3-4. The Ag and Mo data sets, which the values less than the detection limit occupy more than 90 % of the total, is excluded from a calculation in advance.

Table 2-3-4 Correlation matrix, Ibologero Area

	As	Cu	Mo	Pb	Sb	Zn	Hg	W	Bi
As	1.000								
Cu	0.249	1.000							
Mo	0.045	0.171	1.000						
Pb	-0.057	-0.199	-0.016	1.000					
Sb	0.168	0.197	0.161	-0.150	1.000				
Zn	0.185	0.490	0.030	-0.048	0.106	1.000			
Hg	0.010	-0.029	0.106	0.020	0.153	0.093	1.000		
W	-0.120	0.013	0.110	0.161	-0.171	-0.084	0.021	1.000	
Bi	-0.161	0.080	0.086	-0.013	-0.049	-0.040	0.010	0.205	1.000

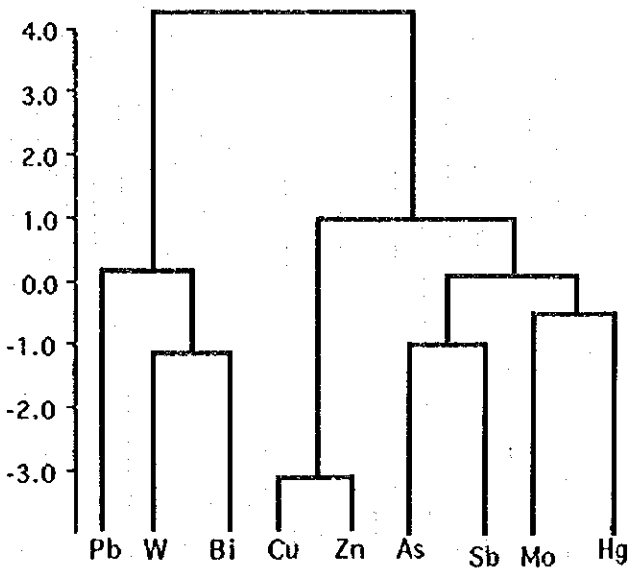

Fig.2-3-7 Dendrogram showing the similarities among the elements, Ibologero Area

Factor loadings, contributions and communality after varimax rotation, provided as a result of factor analysis is shown in Table 2-3-5.

Table 2-3-5 Factor loadings, contributions and communality after varimax rotation, Ibologero area

	Load ings				
	Factor 1	Factor 2	Factor 3	Factor 4	Communality
As	0.303	-0.283	-0.219	0.114	0.2015
Cu	0.670	0.128	-0.094	0.279	0.5523
Mo	0.088	0.202	-0.362	0.091	0.1879
Pb	-0.086	0.045	-0.011	-0.456	0.2173
Sb	0.130	-0.161	-0.363	0.287	0.2574
Zn	0.697	-0.087	-0.056	-0.024	0.4964
Hg	0.015	-0.028	-0.378	-0.088	0.1514
W	-0.021	0.436	-0.035	-0.234	0.2465
Bi	-0.006	0.470	-0.018	0.047	0.2231
Contributions	1.059	0.585	0.436	0.451	

Factor score distribution map of Ibologero area is shown with Fig. 2-3-8.

This figure selected the Factor 1 (Cu-Zn), the Ffactor 2 (Bi-W) and the Factor 3 (Hg-Sb-Mo) as 3 factors of comparatively high factor contribution rates, and assigned cyan, magenta and yellow to each factor. The score is shown by the darkness.

A characteristic of each distribution of factor that can be read from this figure is shown below;

Factor 1 (Cu-Zn): Factor 1 is shown by a blue color system (blue, the green and purple) on the figure. It resembles with element combination of the Factor 1 in the Igengi area. The Factor 1 widely covers the hills around southern margin of the area overlapped with the Factor 3. It is also covers in northwestern area, where the Factor 2 is overlapped in a part. Although the Factor 2 is sporadically distributed over central and northern area, the factor score is not high, because the scores is shown by comparatively light colors on the figure.

Factor 2 (Bi-W): Factor 2 is shown by a magenta color system (magenta, red and purple) on the figure. It is distributed in northern area, comparatively concentrated. It is also distributed widely in central and southern area, but not concentrated. It resembles with element combination of the Factor 2 in the Igengi area. So it is probably related to granite.

Factor 3 (Hg-Sb-Mo): The Factor 3 is shown by a yellow color system (yellow, red and the green) on the figure. It is broadly scattered all over the area.

Scale 1 : 50.000

0 1 2 3km

LEGEND

Factor 1 Cu-Zn

Factor 2 Bi-W

Factor 3 Hg-Sb-Mo

Kalongale

Nembwe

MWANSENIHO

YOGELO

MWAKINDA

MWAMILU

SCATTERED CULTIVATION

CULTIVATION

Dam

Ch

N

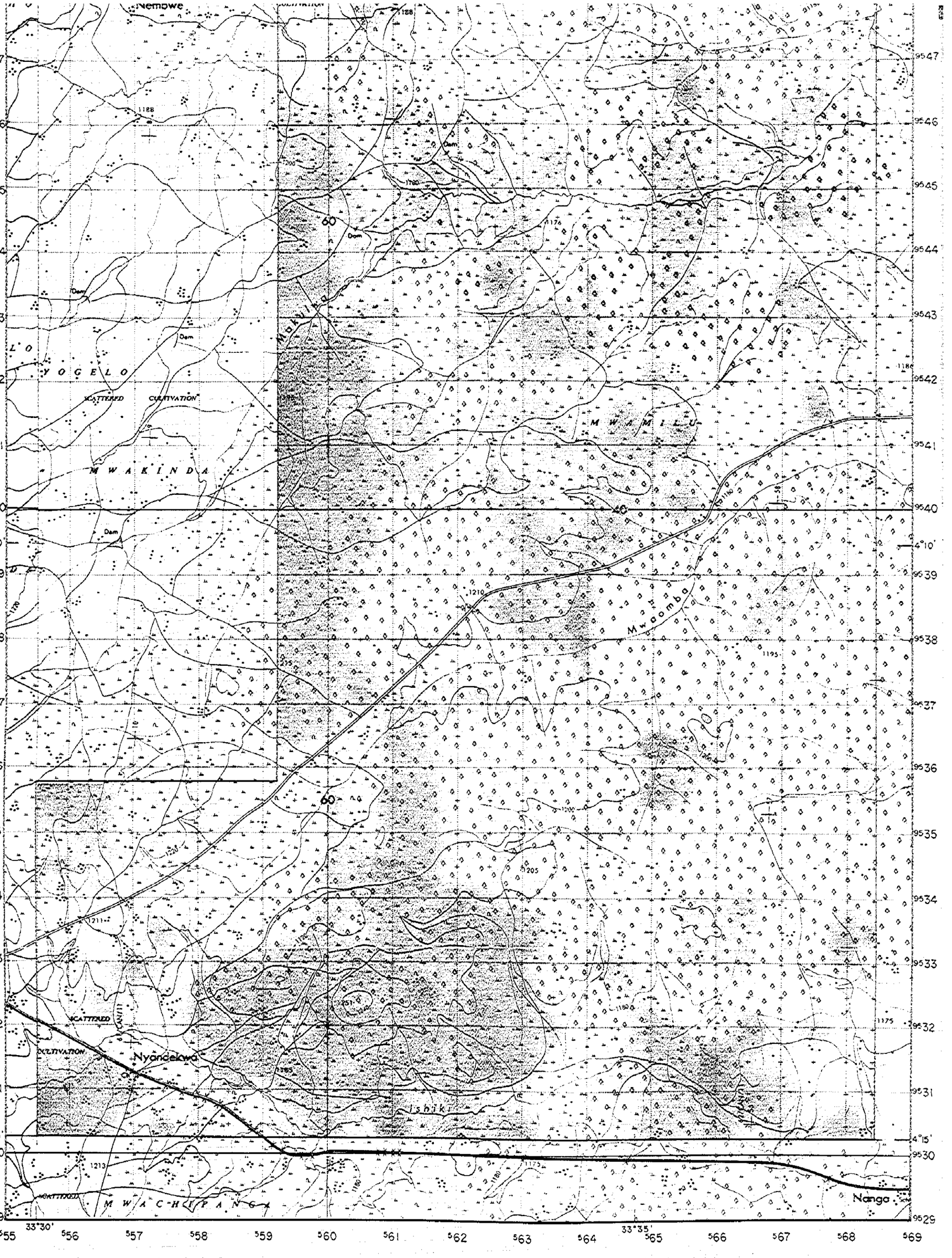

Fig. 2-3-8 Distribution of factor score, Ibologero Area

3-4 Discussion

The results of the geological and geochemical explorations are summarized as followings;

Geology and mineral showings : Four mineral showings; the Kalangale, Nembwe, Mwamilu and Nyandekwa Showings from north to south were newly located by this year's exploration. They consist of white quartz veins or silicified rocks or float zones of them. Sulfide and oxide minerals are usually very rare in these veins and rocks. These mineral showings exist both in the units of Nyanzian System and the Granitic Rocks. No obvious relationship between the locations and geologically favorable structures such as faults or airphoto lineaments, has not cleared yet.

Assay results of 39 samples taken from these showings indicated high potentiality for Au-Ag mineralization to the Mwamila Showings in which a sample of a quartz vein assayed at 15.9 g/t Au and 20.65 g/t Ag. Seven samples taken from the sheared rocks accompanying the vein and altered wall rocks of metarhyolite also show mineralization of gold and silver (assayed at 0.03 - 0.15 g/t Au and <0.34 - 6.9 g/t Ag). Contents of Cu, Pb, Zn and Pt of these samples were under or near the detection limits. Samples taken from other three showings assayed too low to indicate certain mineralizations for gold. Contents of other elements , Ag, Cu, Pb, Zn, and Pt were also under or near the detection limits in these showings.

Geochemical exploration: Contents of Au and Ag in most of soil samples were under detection limits. Only twenty points with Au contents of more than 2 ppb were sporadically detected in the survey area, and five points among them were detected in a certain concentration in the area 0.5 to 2 km west of Nyandekwa Mineral Showings where the Nyanzian rocks were distributed. Other points were located both in the Nyanzian and the granitic terraines.

Contents of Sb, Hg, Pb and W in soil samples were all low in comparison with soil samples in the Igengi and Mhunze Areas, and then no definite anomaly was defined in the area. Contents of As shows the same behavior as those elements but it shows rather high contents around the Nyandekwa Mineral Showing.

No definite anomalies indicating mineralization for Cu and Zn were detected, though contents of the elements were high in the area of the Nyanzian rocks and low in the area of granites, reflecting the geology of bed rocks.

Bi and Mo were clearly anomalous in the Kalangale Showing in the northern part of the area. It may be possible that some genetic relations are exist between quartz veins and the high anomalies of the two elements, because quartz veins are widely distributed in the showing in comparison with other showings.

comparison with other showings.

Two remarkable characters about the results of the geochemical exploration in the area are pointed out;

Contents of Au in most soil samples were under the detection limit.

Contents of As in soil samples is very low compared with Igengi and Mhunze Areas where Au and As are in a high correlation.

It is thought that the thick surface cover in the area caused the results., and /or mineralized zones in the area are too small to be detected by the wide grid spaces for geochemical sampling. Taking into account that the distribution patterns of other elements reflected the geology of bed rocks and the contents were almost same as other two areas, the latter supposition is thought to be more reliable.

The Mwamilu Showing where gold mineralization was confirmed (Au=15.9 g/t) is judged to be the most potential target area among four showings. It is recommended that trenching and drilling works, and a detailed geological and geochemical exploration are to be carried out to clarify the distribution, occurrence and value of quartz veins, and to grasp the size of the mineralized area.

The Kalangale Showing (highly anomalous for Bi and Mo, and weakly anomalous for Au) and the Nyandekwa Showing (very weakly anomalous for Au and As) are also possible targets for detailed geological mapping and analysis of ore samples though the priority for exploration is lower than that of the Mwamilu Showing.

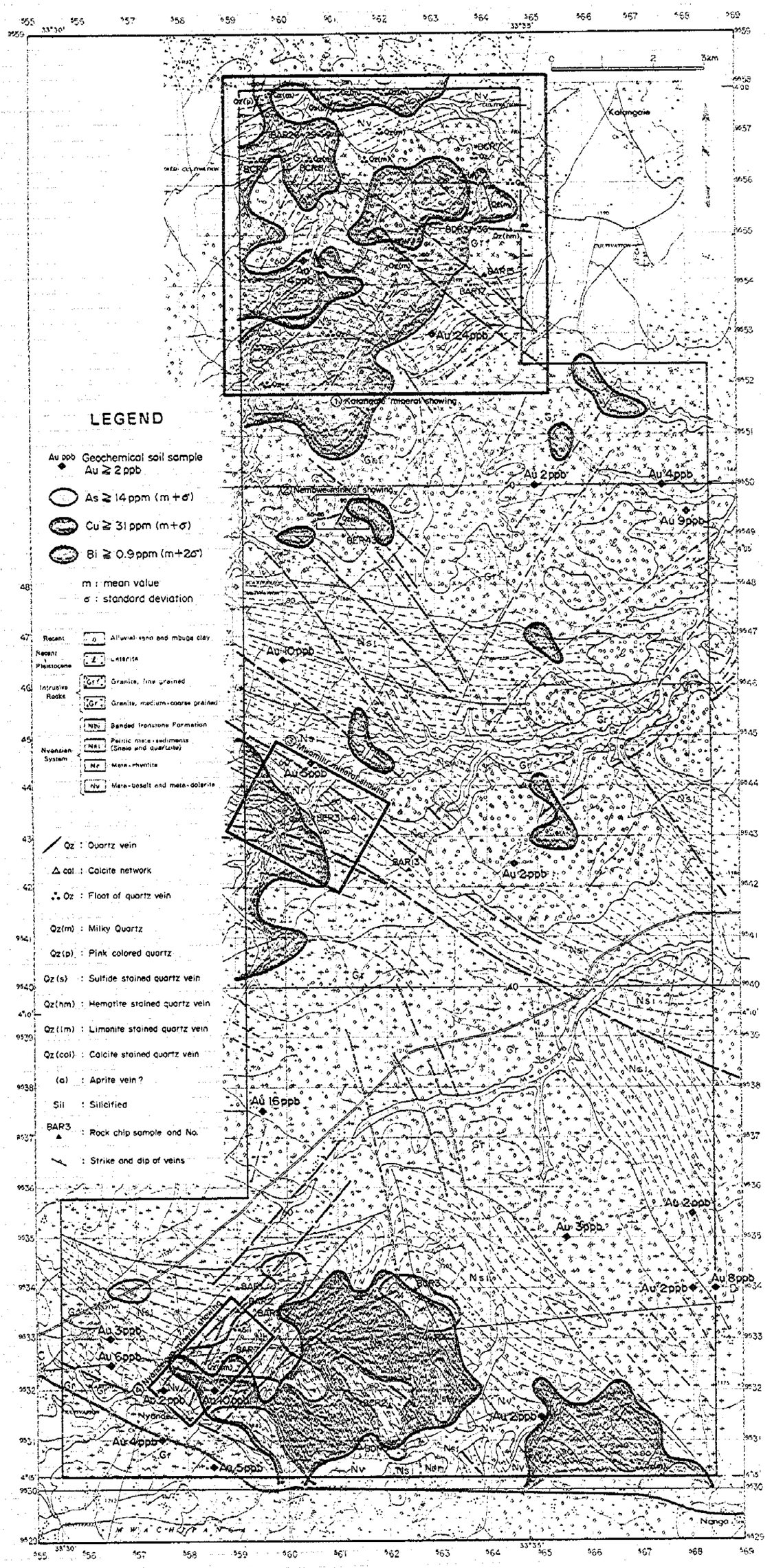

Fig. 2-3-9 Interpretaion map of the geological and geochemical survey in the Ibologero Area

PART 3 CONCLUSION AND RECOMMENDATION

PART 3 CONCLUSION AND RECOMENDATION

CHAPTER 1 CONCLUSION

1-1 Igengi Area

(1) This area is geologically situated in the eastern part of the " Mabale Greenstone Belt" of the "Lake Victoria Goldfields". The geology of the area comprises the Nyanzian and Kavirondian Systems of Archean age and the Granitic Rocks which intruded the Nyanzian System.

(2) The most major fault, running through the area NNE-SSW from the Nyang'homango Village in the north to the Lutulutale Village in the south are estimated to be accompanied by shear zones judging from the existence of sheared shales and milonites nearby the fault.

(3) Quartz veins or the floats were found in the Mbanga, Nyanguku and Igengi Showings, but the assay results were too low for all analytical elements (Au, Ag, Cu, Pb, Zn and Pt) to warrant further explorations.

(4) The Shikung Hill Area in the north and the Bujingwa Hill Area in the south of the area were detected as high possible areas indicating mineralization of gold from the results of the geochemical exploration of this year. In the Shikung Hill Area, gold mineralization appear to have occurred along zones of shearing of Nyanzian metabasalts nearby the major NNE fault and in Kavirondian Quartzite. In the Bujingwa Hill Area, mineralization of gold may have occurred in the fracturing zones of quartzites, but the area is smaller than the area of the Shikung Hill.

(5) Integrating all the results that have been revealed by this exploration, it is desirable to give priority to the Shikungu Hill Area for Phase II exploration, and the the Bujingwa Hill Area follows it.

1-2 Mhunze Area

(1) This area is geologically situated in the southeastern part of the "Mabale Greenstone Belt" of the "Lake Victoria Goldfields". The geology of the area comprises the Nyanzian Pelitic Metasediments and Banded Ironstone Formation, and the Granitic Rocks which intruded the Nyanzian rocks in the northeast and south parts of the area.

(2) Many faults parallel to the bedding planes of the Nyanzian rocks exist in the area. They are

present in two groupes of faults to; the west of the Chasalawi Village and in the Mhande Hill Area. Fracture zones accompanying faults were confirmed in some outcrops of the latter.

(3) Floats of pyrite-bearing quartz veins were found in several places of the fault zones to the west of the Chasalawi Village (West Chasalawi Showing). One of the samples in the showing assayed at 2.93g/t Au. In the Mhande Hill area, the assay results of four samples of banded ironstones taken near the fracture zones did not indicate any mineralization for Au, Ag, Cu, Pb, Zn and Pt.

(4) Three areas where soils have relatively higher contents of Au were located by the results of the geochemical exploration to the west of the Chasalawai Village, to the north of Ibila Village and to the south of the Mhande Hill. Anomalous zones for high contents of As and for high scores of the first factor of the factor analysis match in general with the high anomalous zones of Au.

(5) Synthesizing the distribution of faults, mineral showings and the results of the geochemical exploration in the area, it is desirable to give priority to the West Chasalawi Showing (Area) for the second phase exploration.

(6) It is very difficult to asses the mineralization of the Ibila Village and Mhande Hill areas from the results of this year's works, because the areas are densely covered with superficial materials such as weatherd soils and Mbuga clays. So it is desirable to explore the depth by drilling though the priority is lower than the West Chasalawi Area.

1-3 Iborogero Area

(1) This area is geologically situated in the eastern part of the "Nzega Greenstone Belt" of the "Lake Victoria Goldfields". The geology of the area comprises the Nyanzian Metavolcanics and Metasediments, and the Granitic Rocks which intruded the Nyanzian rocks. The Nyanzian rocks, strongly folded, are distributed in several blocks separated by faults and granite bodies.

(2) Four mineral showings; Kalangale, Nembwe, Mwamilu and Nyandekwa Showings from north to south were newly located by this year's exploration. They consist of white quartz veins and silicified rocks or float zones of them. Sulfide and oxide minerals are usually very rare in these veins and rocks.

(3) One sample of a quartz vein taken in the Mwamilu Showing assayed at 15.9 g/t Au and 20.65 g/t Ag. Rhyolites, the wallrocks of the vein also showed mineralizations of Au and Ag. The showing is structuraly situated near a large faults running NW and being accompanied by zones of

shearing and fracturing, so it is possible that the mineralization has also been occured in these zones.

(4) Contents of Au, Ag, As, Sb, Hg, Pb and W in soil samples were all low in comparison with that of in the Igengi and Mhunze Areas, then no definite geochemical anomaly was located in the area. Especially for Au and Ag, 98 % of totale samples were under detection limits. It is thought that the results is due to the thick surface cover of the area, and/or too wide grid spaces for sampling to detect the mineralized zones.

(5) It is desirable to give priority to the Mwamilu Showing and the neighbouring areas for the second phase exploration.

(6) The Kalengale Showing (highly anomalous for Bi and Mo and weaky anomalous for Au) and the Nyandekwa Showing (weakly anomalous for Au and As), though priority is lower than the Mwailu Showing, are also possible targets for detailed geological mapping and analysis of ore samples.

CHAPTER 2 RECOMMENDATION

Based on the exploration results of Phase I, it is recommended to give priority to the following works for Phase II project.

1. Mwamilu Showing in the Iborogero Area

Boring and trenching works to clarify the distribution, occurrene and mineralization of gold-bearing quartz veins.

Detailed geochemical exploration to grasp the size of mineralized area.

Detailed geological mapping to find out quartz veinz in the neigbouring areas.

2. West Chasalawi Area in the Mhunze Area

Boring works to explore the depth of the float zone of gold-bearing quartz veins.

Detailed geochemical exploration to delineate the mineralized zone.

Detailed geological mapping to know the geology and mineralization of the area.

3. Shikungu Hill and the south in the Igengi Area

Detailed geochemical exploration to confirm the shape and size of the mineralized zones.

Detailed geological mapping to Know the geology and mineralization of the area.

Following works are also desirable to carry on, though priority is lower than the above three items.

4. Area to the north of the Ibila Village and south of the Mhande Hill in the Mhunze Area

Short boring to know the geology and mineralization under the soil cover.

5. Bujingwa Hill and the surrounding area in the Igengi Area

Detailed geochemical exploration to confirm the size and shape of the mineralized zone

Detailed geological mapping to know the geology and mineralization of the area.

6. Kalangale and Nyandekwa Showings in the Iborogero Areas

Geological exploration to confirm the characteristes of the showings.

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REFERENCES

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Appendix

APX. 1 List of tested rock samples

Apx. 1 List of tested rock samples

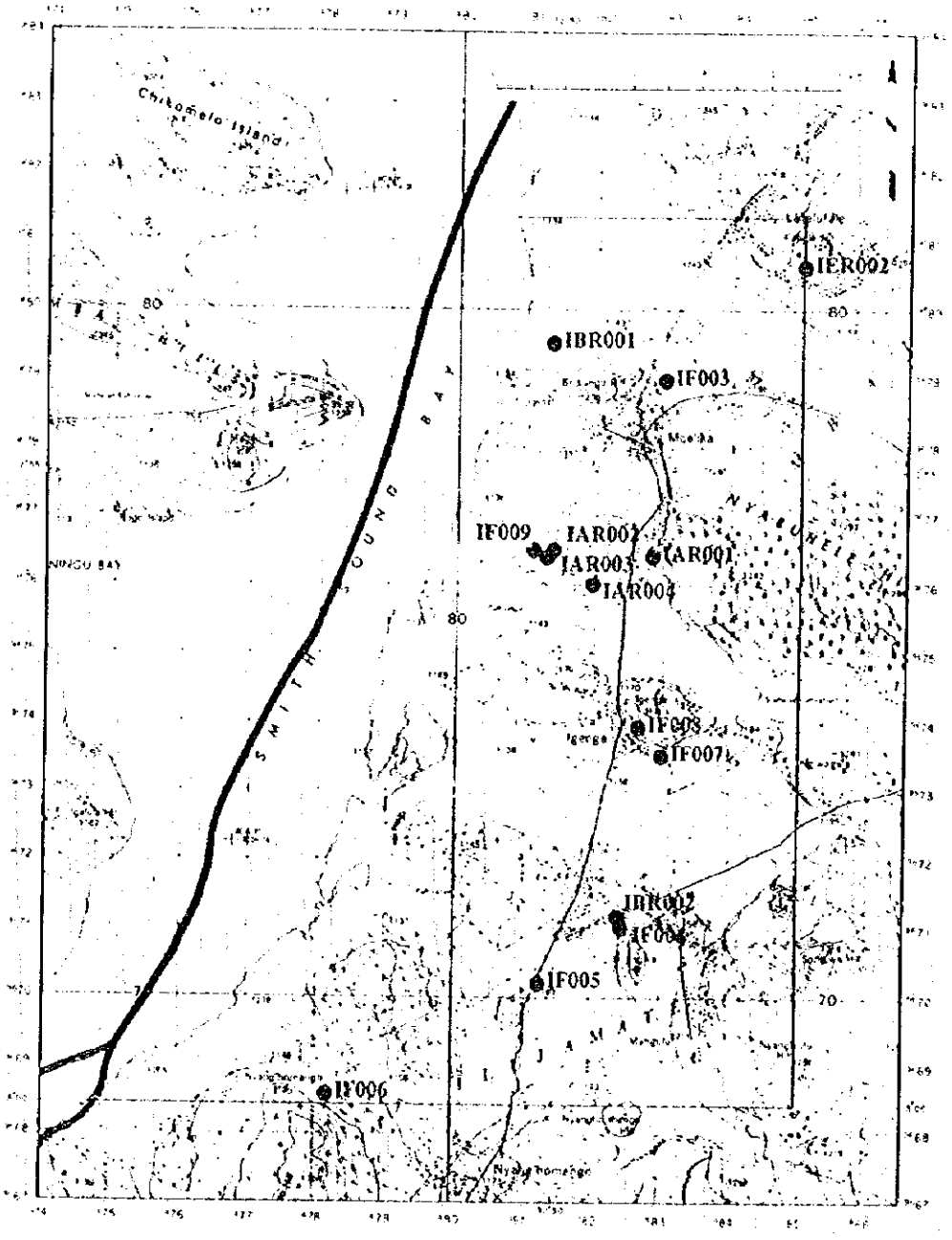
Serial No.	Sample No.	Coordination X	Coordination Y	Field name	Microscopic observations: Rock	Microscopic observations: Ore	X-ray diffraction	Whole rock analysis	Chemical analysis	Physical properties
1	BAR001	559.000	9,634.000	Brecciated chert		○	○		○	
2	BAR002	559.000	9,633.600	Brecciated chert		○			○	
3	BAR003	559.000	9,633.400	Siliceous rock			○		○	
4	BAR006	559.000	9,632.700	Chert			○			
5	BAR007	559.000	9,632.700	Chert		○			○	
6	BAR008	559.500	9,630.500	Meta-basalt dyke	○			○		
7	BAR012	562.500	9,642.300	Calcrete			○			
8	BAR013	562.500	9,642.300	Laterite		○			○	
9	BAR014	567.800	9,650.000	Metamorphic rock	○			○		
10	BAR015	564.200	9,654.000	Banded meta-quartzite					○	
11	BAR017	562.800	9,654.000	Altered quartzite			○		○	
12	BAR018	562.400	9,654.000	Schistose granite	○			○		○
13	BAR021	561.800	9,649.000	Pyroxenite?	○			○		○
14	BAR026	560.600	9,657.000	Quartz vein					○	
15	BAR027	560.600	9,657.000	Quartz vein					○	
16	BAR028	560.600	9,657.000	Quartz vein					○	
17	BAR029	560.600	9,657.000	Quartz vein					○	
18	BBR002	558.500	9,632.750	Siliceous vesicular rock (Nzegite?)	○			○		○
19	BBR003	558.000	9,631.600	Dolerite (intrusive)	○			○		○
20	BBR006	561.000	9,644.300	Rhyolite (quartz-phenocrysts)	○		○	○		
21	BBR007	563.900	9,656.000	Granite (chloritized)			○			
22	BBR014	567.400	9,650.500	Silica-concrete sediment			○			
23	BBR016	565.100	9,650.500	Granite (mafic m. altered to epidote)	○			○		○
24	BBR018	560.900	9,650.500	Granite (pyrite-disseminated)	○			○		○
25	BBR019	560.700	9,650.500	Granite	○			○		○
26	BCR002	562.000	9,631.700	Rhyolite		○	○		○	
27	BCR003	562.500	9,633.950	Chert?		○			○	
28	BCR007	563.850	9,656.500	Quartz vein		○			○	
29	BCR008	560.900	9,656.500	Quartz vein		○			○	
30	BCR009	559.500	9,656.500	Quartz vein		○	○		○	
31	BCR013	559.750	9,652.000	Sheared granodiorite	○			○		

Apx. 1 List of tested rock samples

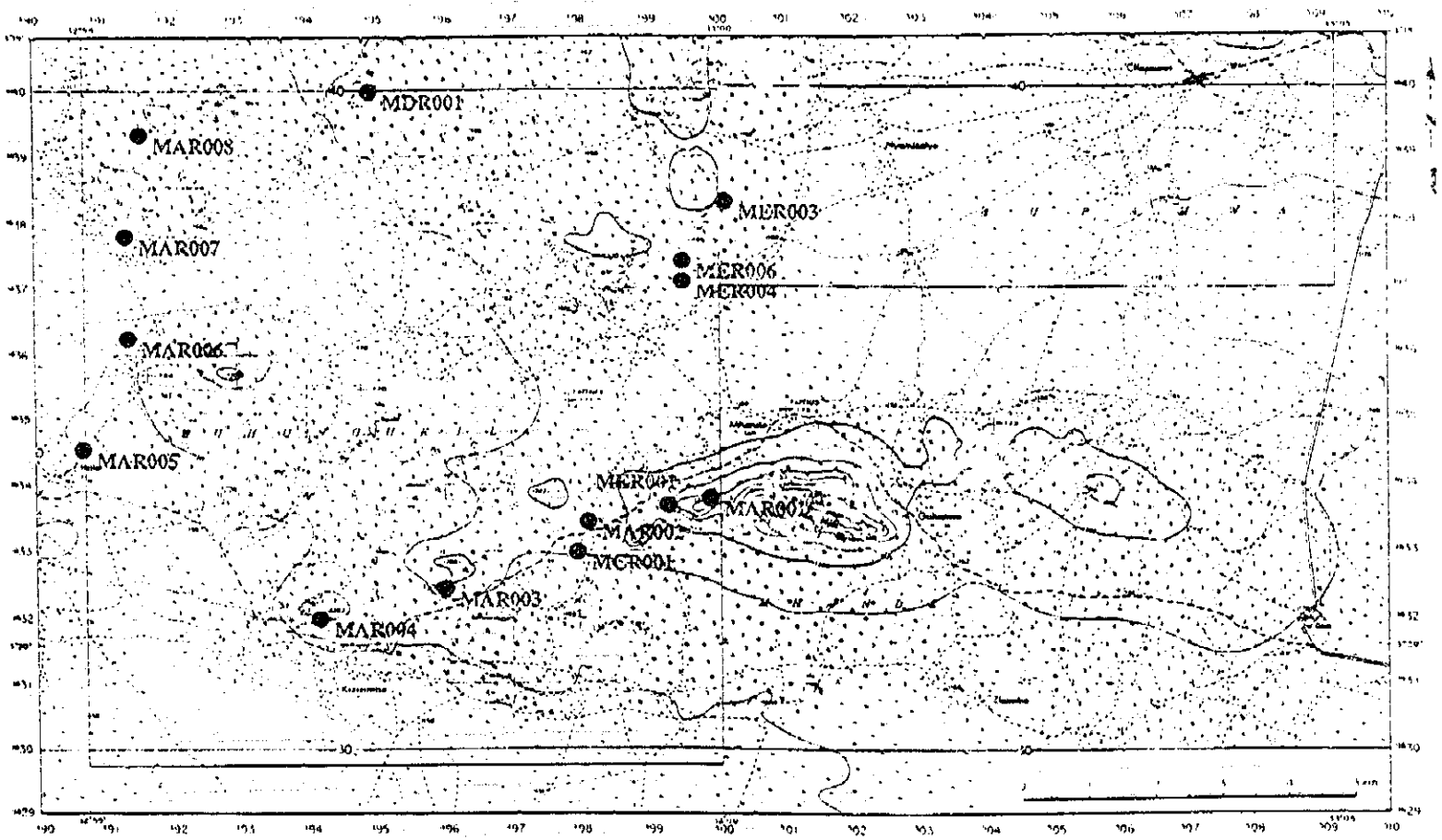
Serial No.	Sample No.	Coordination X	Coordination Y	Field name	Microscopic observations Rock	Microscopic observations Ore	X-ray diffraction	Whole rock analysis	Chemical analysis	Physical properties
32	BDR001	566.000	9,630.900	Dolerote dyke	○			○		○
33	BDR003	560.500	9,635.150	Carbonate vein		○	○		○	
34	BDR004	560.000	9,634.000	Phyllite (basalt?)			○			
35	BDR008	567.000	9,643.100	Calcrete			○			
36	BDR011	560.521	9,643.440	Rhyolite	○			○		○
37	BDR012	560.521	9,643.440	Quartz vein		○				
38	BDR015	559.500	9,642.500	Quartzite?	○			○		
39	BDR016	564.400	9,655.400	Quartz vein		○				○
40	BDR031	563.900	9,656.000	Quartz vein					○	
41	BDR032	563.900	9,656.000	Quartz vein		○			○	
42	BDR033	563.900	9,656.000	Quartz vein					○	
43	BDR034	563.900	9,656.000	Quartz vein					○	
44	BDR035	563.900	9,656.000	Quartz vein					○	
45	BDR036	563.900	9,656.000	Quartz vein					○	
46	BER031	560.521	9,643.440	Quartz vein					○	
47	BER032	560.521	9,643.440	Quartz vein					○	
48	BER033	560.521	9,643.440	Altered rhyolite			○		○	
49	BER034	560.521	9,643.440	Sheared quartz vein		○			○	
50	BER035	560.521	9,643.440	Brecciated quartz vein		○			○	
51	BER036	560.521	9,643.440	Milky quartz vein					○	
52	BER037	560.521	9,643.440	Altered rhyolite					○	
53	BER038	560.521	9,643.440	Schistosed rhyolite					○	
54	BER039	560.521	9,643.440	Fractured quartz vein - rhyolite					○	
55	BER040	560.521	9,643.440	Quartz vein			○		○	
56	BER041	560.521	9,643.440	Altered rhyolite					○	
57	BER042	560.521	9,643.440	Quartz vein float		○				○
58	BER043	561.230	9,643.440	Quartz vein					○	
59	BER044	561.230	9,643.440	Quartz vein					○	
60	BER045	561.230	9,643.440	Quartz vein					○	
61	BER046	561.230	9,643.440	Quartz vein					○	
62	BER047	561.230	9,643.440	Quartz vein					○	

Apx. 1 List of tested rock samples

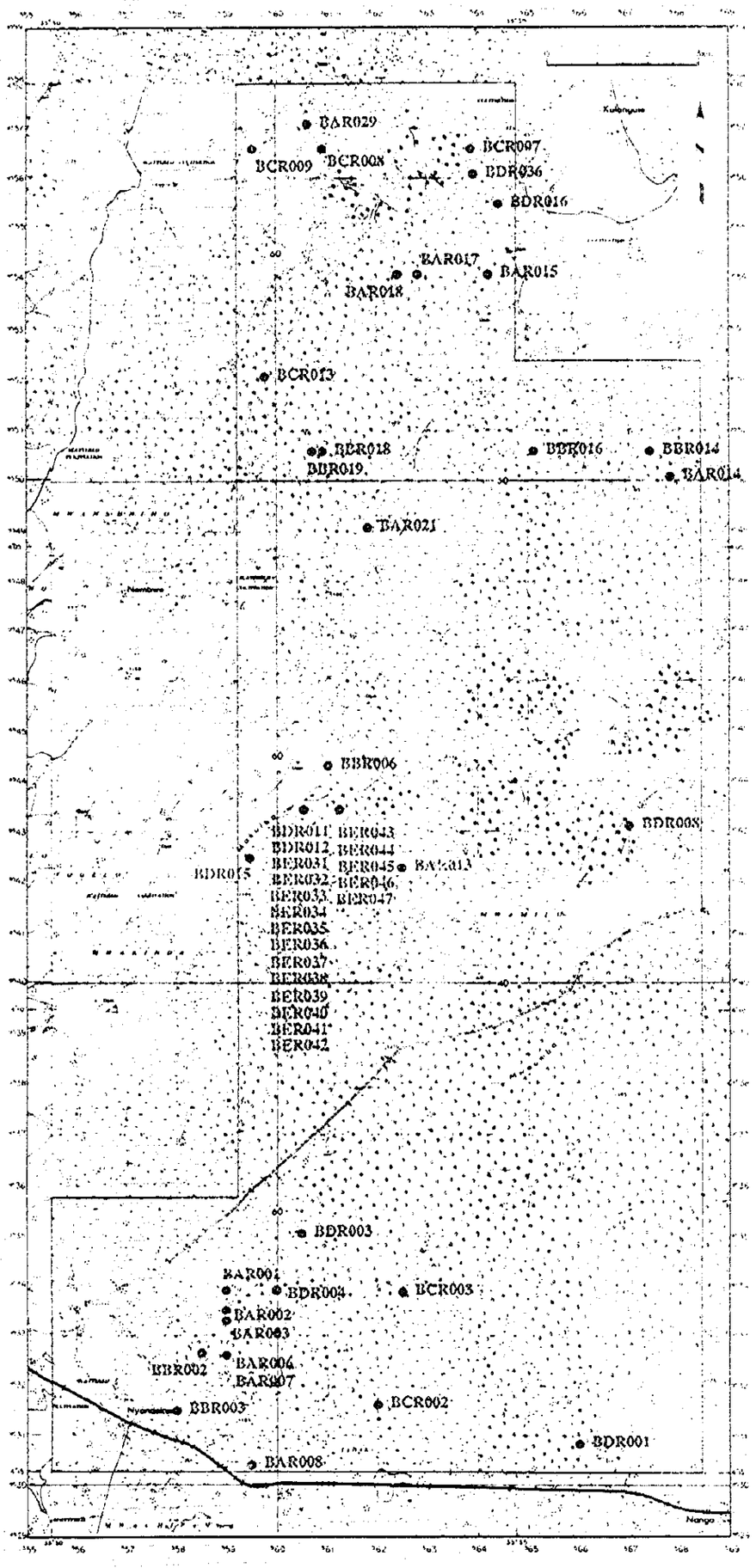
Serial No.	Sample No.	Coordination X	Coordination Y	Field name	Microscopic observations: Rock	Microscopic observations: Ore	X-ray diffraction	Whole rock analysis	Chemical analysis	Physical properties
63	BER042	560.521	9,643.440	Quartz vein float		○				○
64	BER043	561.230	9,643.440	Quartz vein					○	
65	BER044	561.230	9,643.440	Quartz vein					○	
66	BER045	561.230	9,643.440	Quartz vein					○	
67	BER046	561.230	9,643.440	Quartz vein					○	
68	BER047	561.230	9,643.440	Quartz vein					○	
69	IAR001	483.000	9,676.400	Quartz vein					○	
70	IAR002	481.400	9,676.400	Meta-basalt			○			
71	IAR004	482.100	9,676.000	Quartzite					○	
72	IBR001	481.500	9,679.500	BIF (float)		○				
73	IBR002	482.500	9,671.150	Basalt (with sub-angular quartzite pebble)			○			
74	IER001	485.300	9,680.600	Quartz vein					○	
75	IER002	485.300	9,680.600	Quartz vein					○	
76	IF004	482.550	9,671.000	Fine alteration beds of basic tuff and quartzite			○			
77	IF005	481.300	9,670.200	Granodiorite						
78	IF006	478.100	9,668.600	Banded iron formation			○			○
79	MAR001	499.900	9,633.800	Banded iron formation					○	
80	MAR002	498.150	9,633.450	Laterite					○	
81	MAR003	496.100	9,632.450	Banded iron formation					○	
82	MAR004	494.300	9,632.000	Massive BIF		○			○	○
83	MAR005	490.900	9,634.500	Laterite					○	
84	MAR006	491.550	9,636.200	BIF	○				○	○
85	MAR007	491.500	9,637.750	Laterite					○	
86	MCR001	498.000	9,633.000	Banded iron formation			○			
87	MDR001	495.000	9,639.900	Quartzite						○
88	MER001	499.300	9,633.700	Banded iron formation		○				
89	MER003	500.100	9,638.300	Silicified rock		○			○	
90	MER004	499.500	9,637.100	Quartz vein		○			○	
91	MER006	499.500	9,637.400	Silicified rock					○	



Apx. 2 Location map of tested samples, Igengi area



Apx. 3 Location map of tested samples, Mhunze area



Apx. 4 Location map of tested samples, Ibologero area

Apx. 5 Summary of microscopic observation (thin sections)

(Porphyritic rocks)

Serial No.	Sample No.	Coordiation X	Coordiation Y	Field name	Texture	Phenocryst and Rock-fragment: K-feldspar	Quartz	Plagioclase	Clinopyroxene	Rock-fragment	Groundmass and accessory minerals: Clinopyroxene	Plagioclase	Apatite	Zircon	Tourmaline	Opaque mineral	Secondary minerals: Quartz	Muscovite	Hornblende	Actinolite	Montmorillonite	Calcite	Chlorite	Biotite	Plagioclase	Epidote	Remarks
1	BAR014	567.800	9,550.000	Metamorphosed sandstone	lepidoblastic		◎			+				·	·	·	+	◎									Clast detrital grains remains, muscovite schist
2	BBR006	561.000	9,544.300	Meta-rhyolite	porphyritic, granoblastic	+	+	+								·	◎	○					+		◎		Meta-rhyolite - meta-granite porphyry, groundmass
3	BDR011	560.521	9,534.440	Meta-rhyolite	porphyritic, granoblastic		+									·	○	◎									Metamorphosed rhyolite, phenocrysts remain
4	IF007	483.150	9,673.500	Meta-dacite	porphyritic, granoblastic	+	·	+					·			+	◎		○			·	+	·	○	+	Recrystallized, phenocrysts remains
5	IF009	481.500	9,676.500	Meta-basalt	porphyritic, intergranular				·		·	+				·				○	+		○			+	Metamorphosed
6	MAR008	491.700	9,639.250	Meta-andesite?	porphyritic, granoblastic			+				○				·	○			◎					○		

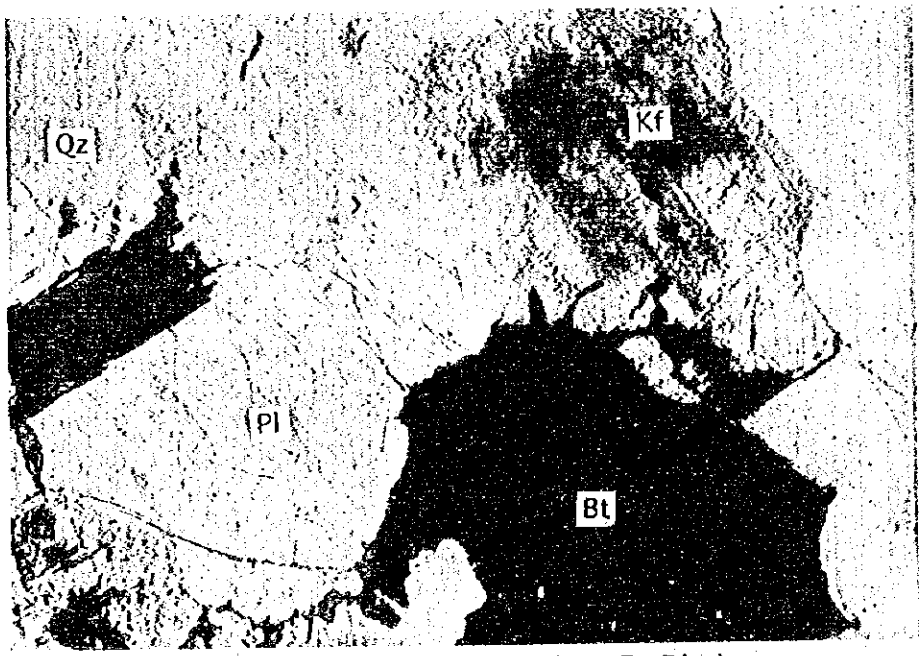
(Holocrystalline rocks)

Serial No.	Sample No.	Coordiation X	Coordiation Y	Field name	Texture	Primary minerals: Biotite	Plagioclase	Quartz	K-feldspar	Clinopyroxene	Hornblende	Secondary minerals: Plagioclase	Hornblende	Biotite	Epidote	Actinolite	Muscovite	Chlorite	Quartz	Tremolite	Calcite	Accessory minerals: Sphene	Opaque minerals	Apatite			Remarks
7	BAR008	559.500	9,530.500	Meta-basalt dyke	granoblastic							○	?	·		◎	·	·				·	+				metamorphosed, no igneous texture remains
8	BAR018	562.400	9,554.000	Schistose granite	granoblastic		·	○	+								◎		◎								metamorphosed granite
9	BAR021	561.800	9,549.000	Gabbro	hypidiomorphic, granular		◎			◎	·												+				clinopyroxene-gabbro
10	BBR002	558.500	9,532.750	Siliceous vesicular rock (Nzegite?)	granoblastic, vesicular													·	◎				+				silicified granite?
11	BBR003	558.000	9,531.600	Meta-dolerite (intrusive)	granoblastic		+						◎		+			+	+		+	+					metamorphosed dolerite?
12	BBR016	565.100	9,550.500	Granite	hypidiomorphic, granular		○	○	+						○		·	+	+								chloritized, epidotized granite
13	BBR018	560.900	9,550.500	Meta-granite (pyrite-disseminated)	granoblastic		+	○	○					·	+		○	·	◎				·	·			metamorphosed granite, coarse grain remains
14	BBR019	560.700	9,550.500	Granite	granoblastic	+	○	◎	○						+		+	+						·			
15	BCR013	559.750	9,552.000	Sheared granite	granoblastic	·	○	○	+			○		·	+		○		○				·				original grains remain
16	BDR001	566.000	9,530.900	Altered gabbro	hypidiomorphic, granular		○										+	○	+		○		+				primary minerals are replaced , texture remains
17	BDR015	559.500	9,542.500	Metamorphozed carbonate rock	granoblastic							○			+			+	+	◎	+	+	·				clinopyroxene(diopside), metamorphosed calcite-rich rock
18	IAR003	481.200	9,676.500	Meta-gabbro	granoblastic							○			+	◎						+	·				completely recrystallized
19	IF003	483.200	9,678.950	Granite	hypidiomorphic, granular	+	○	○	○								·	·						·			
20	IF008	482.800	9,673.925	Granite	hypidiomorphic, granular	+	○	○	○				·				+	+					·				
21	MAR006	491.550	9,636.200	BIF	granoblastic																						remains

Sample No. : IF003

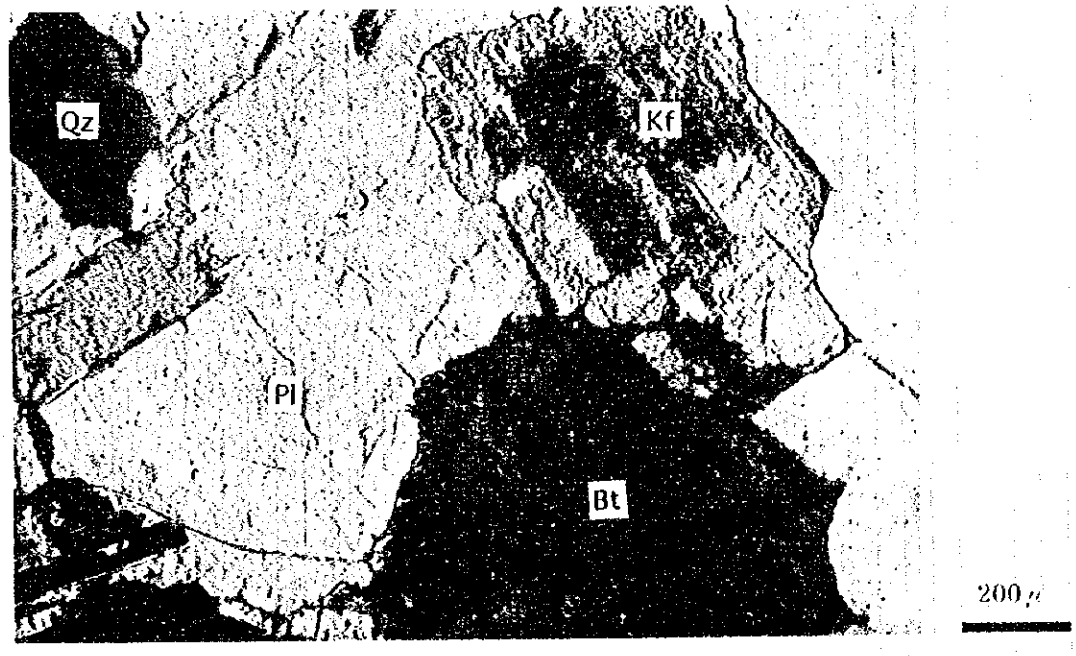
Rock name: Granite

Open nichols



Kf:Potash feldspar, Qz:Quartz, Pl:Plagioclase, Bt:Biotite

Cross nichols

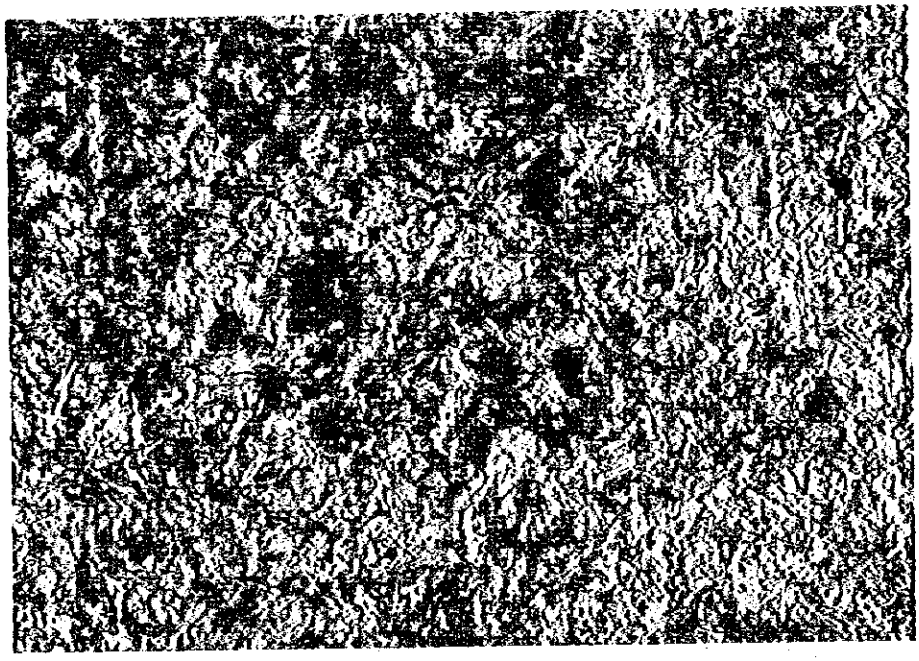


Kf:Potash feldspar, Qz:Quartz, Pl:Plagioclase, Bt:Biotite

Sample No. : IAR003

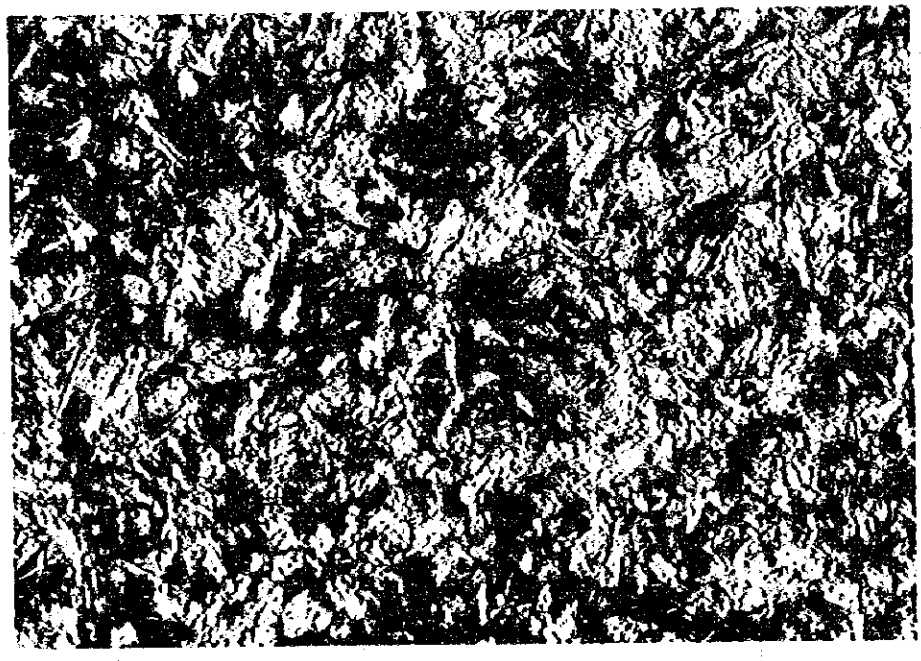
Rock name: Meta-gabbro

Open nichols



200 μ

Cross nichols



200 μ

Apx. 7 Summary of microscopic observation, polished sections

Serial No.	Sample No.	Coordiation X	Coordiation Y	Field name	Description
1	BAR001	559.000	9,634.000	Brecciated chert	Micro-grains of hematite occur in the dark red matrix, forming ring and mesh-like textures. The hematite is partly replaced by geothite. A few micro-grains of pyrite also occur in cherty fragments.
2	BAR002	559.000	9,633.600	Brecciated chert	Nodular or botryoidal aggregates of minute hematite and mesh-like hematite are observed in the brecciated chert. A part of the hematite is replaced by geothite. Some micro-grains of pyrite are also observed in cherty fragments.
3	BAR007	559.000	9,632.700	Chert	Botryoidal, nodular and mesh-like aggregates composed of minute hematite occur along cracks.
4	BAR013	562.500	9,642.300	Laterite	The spheroids formed by minute geothite and clayey minerals are wraped by thin geothite crusts. The spheroids include sub-rounded quartz breccias and a small
5	BCR002	562.000	9,631.700	Siliceous rock	Dark brown banded siliceous rock is accompanied with dark red layers. The layers are formed by the minute hematite grains which show nodule-like aggregates and mesh-like texture. A part of the hematite is replaced by geothite.
6	BCR003	562.500	9,633.950	Comb-structured quartz	The chip is formed by comb-structured quartz, and minute minerals. The minute minerals are geothite and clayey minerals; and fill the space on the top of the comb-structured quartz. The space also includes nodule-like aggregates of minute hematite.
7	BCR007	563.850	9,656.500	Vein quartz and oxidized rock	A small amount of micro hematite and pyrite is observed in the quartz occurring along the fracture. The oxidized rock part is porous and it indicates marks that pyrite grains have been dissolved. The small spaces are covered by thin geothite crusts.
8	BCR008	560.900	9,656.500	Vein quartz and oxidized rock	No ore mineral is observed in the vein quartz. In the host rock, micro-grains of geothite are scattered, and in some parts, patch-like aggregates of geothite occur. A porous aggregate of geothite pseudomorph after pyrite is observed.
9	BCR009	559.500	9,656.500	Siliceous clastic rock	The chip is a dark brown siliceous clastic rock including a lot of rounded quartz fragments. The matrix contains micro-grains and minute aggregates of geothite. Pyrite grains occur in the center of the aggregate as relicts of replacement.
10	BDR003	560.500	9,635.150	Carbonate vein	The vein is composed of minute carbonate minerals and a lesser amount of quartz. A small amount of manganese oxide occurs along the micro fracture.
11	BDR012	560.521	9,634.440	Vein quartz	The chip is composed of a massive quartz part and banded parts. Pyrite in the massive quartz part is euhedral or subhedral and 20 to 50 micrometers in diameter. Pyrite in the banded part is subhedral or anhedral and 20 to 250 micrometers. Rare amount of chalcopyrite and sphalerite inclusions is observed in the pyrite. Minute aggregates of chalcocite and covelline are also observed in some voids of quartz.
12	BDR016	564.400	9,655.400	Massive vein quartz	Massive quartz is dyed by iron oxide and shows light reddish brown color. Some irregular veinlets of geothite occur in the vein quartz. The veinlets are formed by botryoidal and radial aggregates of lamella geothite.
13	BDR032	563.900	9,656.000	Massive vein quartz	Minute grains of hematite are observed in the massive quartz colored to light reddish brown.
14	BER034	560.521	9,643.440	Sheared vein quartz	Pyrite is disseminated both in quartz fragments and in the matrix. The pyrite is partly or completely replaced by geothite.
15	BER035	560.521	9,643.440	Vein quartz	Pyrite grains are scattered in the vein quartz. In only one grain of them, minute native gold occurs as inclusion accompanied with argentite .

Serial No.	Sample No.	Coordiation		Field name	Description
		X	Y		
16	BER042	560.521	9,643.440	Massive vein quartz	The massive vein quartz is cut by irregular veinlets of geothite. The veinlets are classified into three types such as veinlets filled by geothite, honeycomb-shaped veinlets and veinlets of lamella hematite and geothite pseudomorph after pyrite.
17	IBR001	481.500	9,679.500	BIF	The black banded iron ore is accompanied by some euhedral pyrite grains and geothite showing pseudomorph after pyrite. The banded iron ore is composed of magnetite bands and hematite bands.
18	MAR004	494.300	9,632.000	BIF	In some hematite bands of banded iron ore, there occur coarse-grained constituent hematite. Magnetite is observed in the center part of the hematite grain.
19	MER001	499.300	9,633.700	BIF	The BIF is oxidized, and includes porous and patch-like aggregates of minute hematite grains.
20	MER003	500.100	9,638.300	Siliceous rock	Hematite and a lesser amount of geothite are observed in the oxidized and silicified rock. The hematite forms radial aggregates and colloidal aggregates.
21	MER004	499.500	9,637.100	Quartz veinlet	Pyrite is accompanied with quartz veinlets. A coarse grain of pyrite contains a minute grain of native gold as an incluston. Pyrite also contains a small amount of covelline, chalcocite and hematite.

APX.8 Photomicrographs of polished sections

Photo 1
Sample:MER004
Native gold(Au) and argentite(Ag) in pyrite(Py)

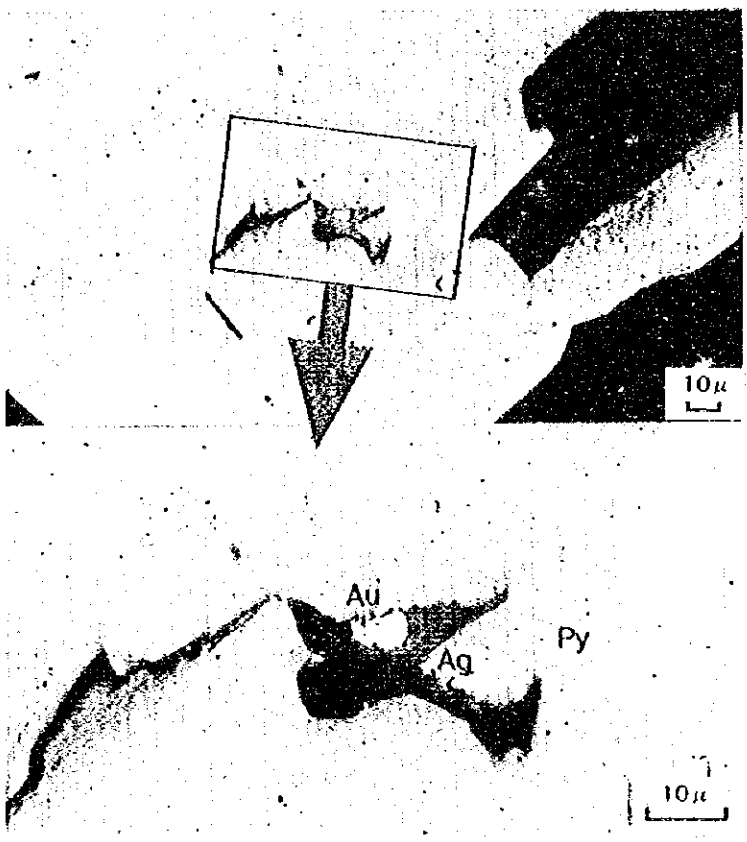


Photo 2
Sample:BER035
Native gold(Au) and argentite(Ag) in pyrite(Py)

Apx. 8 Photomicrographs of polished sections

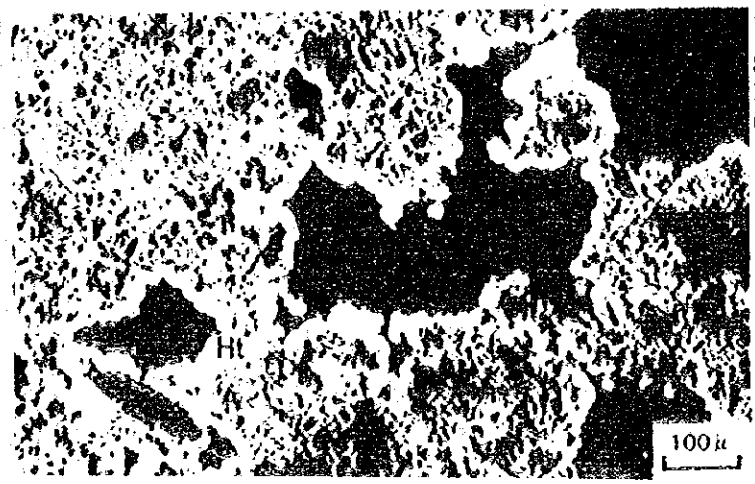


Photo 3
Sample:BAR007
Ring structure of hematite(Ht) nodule

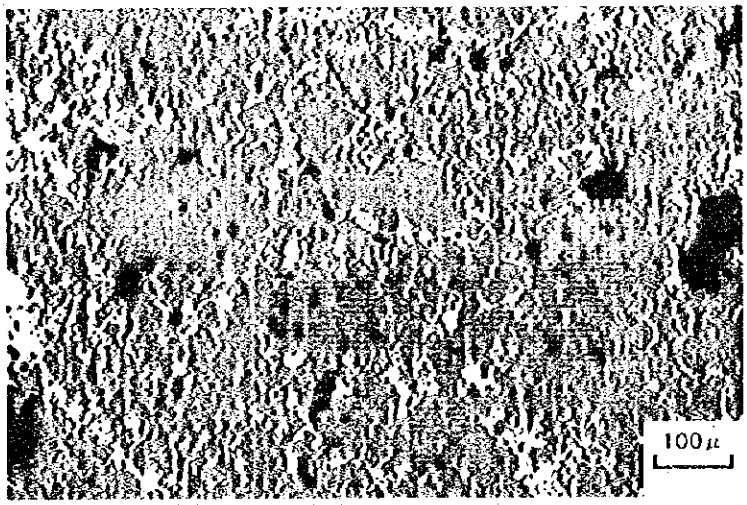


Photo 4
Sample:BAR002
Mesh structure of hematite(Ht)

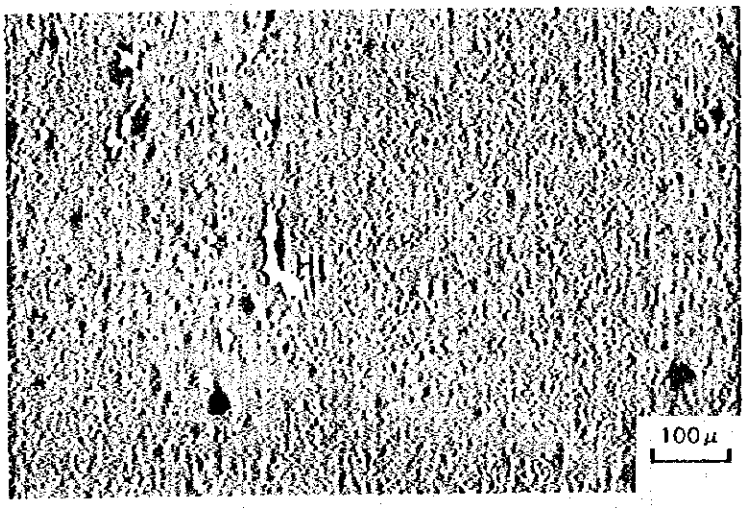


Photo 5
Sample:IBR001
Dissemination of minute hematite(Ht)

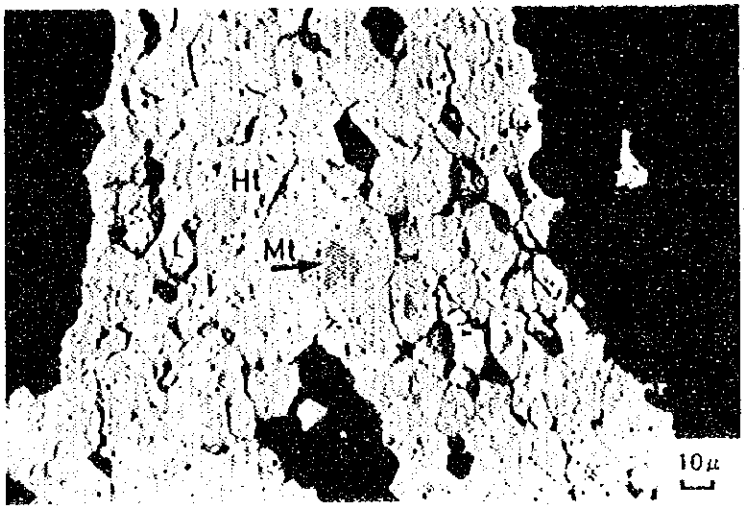


Photo 6
Sample:MAR004
Magnetite(Mt) in the center part of hematite(Ht) crystal

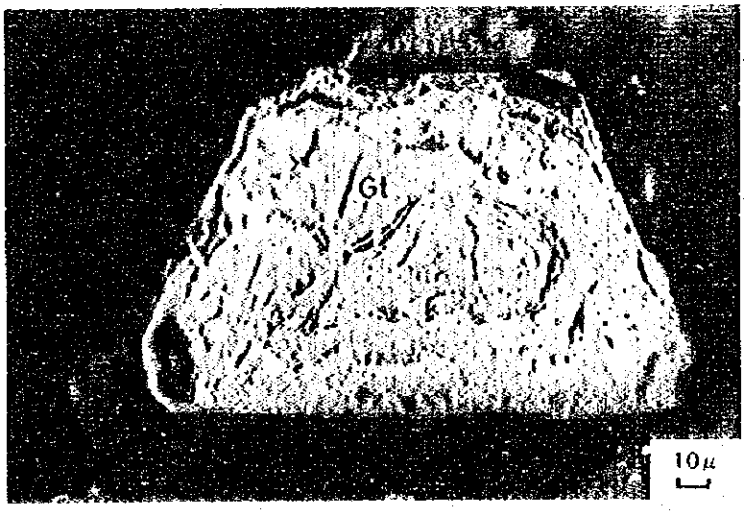


Photo 7
Sample:BCR008
Geothite(Gt) pseudomorph after pyrite(Py)

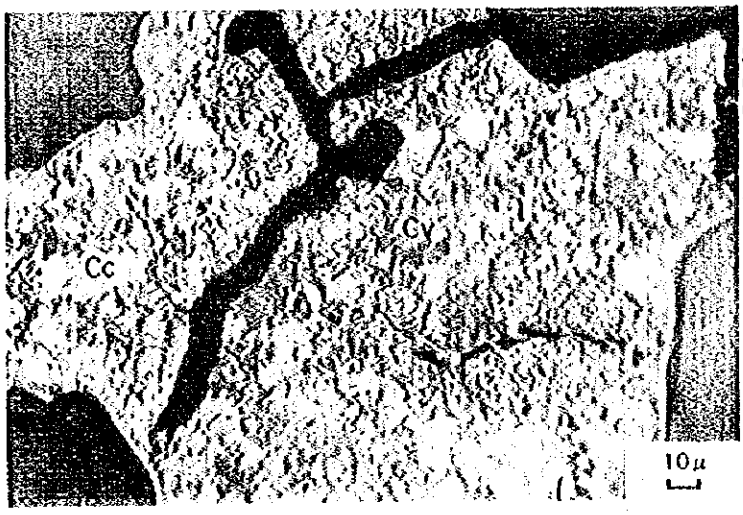


Photo 8
Sample:BDR012
Complex of Covelline(Cv) and Chalcocite(Cc)

Apx. 9 Results of whole rock analysis

Serial No.	Sample No.	Coordination X	Coordination Y	Field name	Analytical results (%) Al_2O_3	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI	Total
1	BAR008	559.500	9.630.500	Meta-basalt dyke	16.21	10.53	0.03	12.68	0.47	6.01	0.26	2.15	0.09	49.03	1.16	1.14	99.76
2	BAR014	567.800	9.650.000	Metamorphic rock	9.16	0.19	0.01	2.80	1.98	0.09	<0.01	0.51	0.05	82.41	0.58	1.64	99.42
3	BAR018	562.400	9.654.000	Schistose granite	11.81	0.07	0.02	3.11	5.06	0.55	0.02	0.11	<0.01	76.18	0.10	1.87	98.90
4	BAR021	561.800	9.649.000	Pyroxenite?	14.80	9.06	0.03	12.26	1.03	5.37	0.17	3.13	0.24	51.65	1.73	0.52	99.99
5	BBR002	558.500	9.632.750	Siliceous vesicular rock (Nzegite?)	0.21	0.09	0.01	0.73	0.06	0.06	<0.01	<0.01	0.02	98.14	0.06	0.20	99.58
6	BBR003	558.000	9.631.600	Dolerite (intrusive)	13.73	11.02	0.03	12.48	0.26	8.10	0.18	2.42	0.04	48.41	0.62	2.46	99.75
7	BBR006	561.000	9.644.300	Rhyolite (quartz-phenocrysts)	13.89	0.25	0.01	0.82	4.28	0.15	0.07	4.68	0.01	74.28	0.07	0.73	99.24
8	BBR016	565.100	9.650.500	Granite (mafic m. altered to epidote)	22.94	11.56	0.01	2.06	0.15	0.10	0.01	4.06	0.08	57.70	0.28	0.88	99.83
9	BBR018	560.900	9.650.500	Granite (pyrite-disseminated)	14.48	1.91	0.01	1.62	4.38	0.33	0.02	4.25	0.07	71.08	0.14	1.06	99.35
10	BBR019	560.700	9.650.500	Granite	14.66	2.11	0.01	1.76	2.99	0.49	0.01	4.48	0.06	71.35	0.19	0.80	98.91
11	BCR013	559.750	9.652.000	Sheared granodiorite	14.61	12.56	0.02	12.64	0.27	5.73	0.23	2.36	0.08	48.87	0.89	1.13	99.39
12	BDR001	566.000	9.630.900	Dolerote dyke	12.86	1.45	0.01	2.39	5.09	0.44	0.03	3.55	0.08	69.25	0.27	3.73	99.15
13	BDR011	560.521	9.643.440	Rhyolite	14.17	1.90	0.01	1.57	4.39	0.35	0.02	4.24	0.07	69.67	0.14	2.56	99.09
14	BDR015	559.500	9.642.500	Quartzite?	14.65	2.07	0.01	1.70	3.15	0.49	0.01	4.58	0.06	71.22	0.19	1.20	99.33
15	IAR003	481.200	9.676.500	Meta-basalt	14.72	12.72	0.03	12.82	0.24	5.75	0.23	2.40	0.08	49.14	0.92	0.73	99.78
16	IF003	483.200	9.678.950	Granodiorite	13.83	7.74	0.01	16.93	0.15	5.09	0.20	2.85	0.12	50.83	1.20	0.58	99.53
17	IF007	483.150	9.673.500	Porphyritic dacite	15.25	3.80	0.02	4.67	3.44	1.84	0.08	5.08	0.32	64.10	0.45	0.74	99.79
18	IF008	482.800	9.673.925	Granodiorite	14.15	1.94	0.01	3.48	4.47	1.26	0.05	3.32	0.13	69.39	0.36	1.20	99.76
19	IF009	481.500	9.676.500	Meta-basalt	15.63	13.32	0.03	12.38	0.25	4.94	0.25	2.20	0.07	48.99	0.91	0.71	99.68
20	MAR008	491.700	9.639.250	Meta-andesite?	13.79	9.23	0.02	10.32	0.14	4.70	0.32	1.56	0.10	57.77	1.54	0.53	100.02

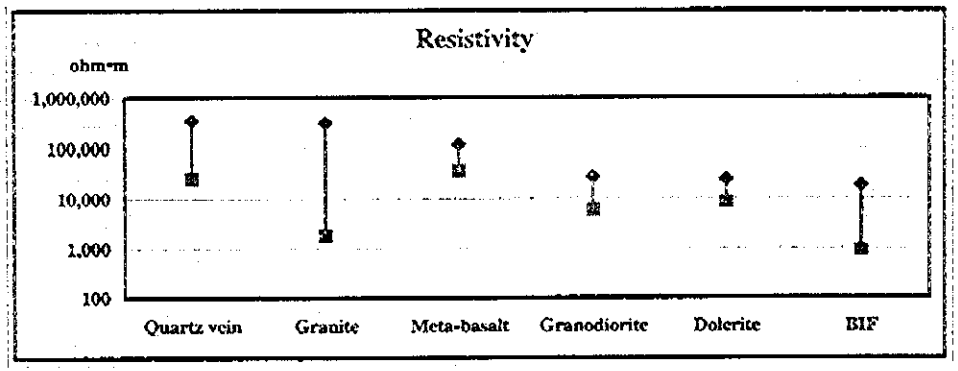
Apx. 10 Summary of X-ray diffraction test

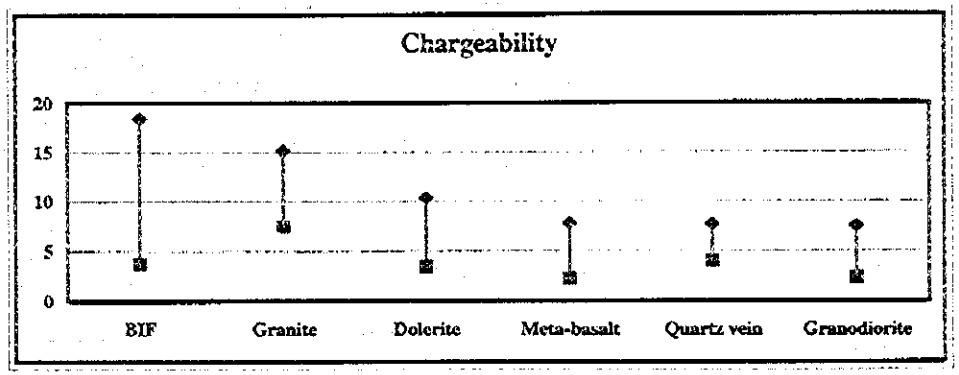
Serial No.	Sample No.	Coordination		Field name	Detected minerals															
		X	Y		Quartz	Plagioclase	K-feldspar	Sericite	Biotite	Kaolinite	Montmorillonite	Chlorite	Epidote	Pyrite	Calcite	Hematite	Hornblende	Orthopyroxene	Apatite	Stilpnomelane
1	BAR001	559.000	9,634.000	Brecciated chert	◎											?				
2	BAR003	559.000	9,633.400	Siliceous rock	◎											?				
3	BAR006	559.000	9,632.700	Chert	◎		?									?				
4	BAR012	562.500	9,642.300	Calcrete	○					○										
5	BAR017	562.800	9,654.000	Altered quartzite	◎			+								?				
6	BBR006	561.000	9,644.300	Rhyolite (quartz-phenocrysts)	◎	◎		+	+						?					
7	BBR007	563.900	9,656.000	Granite (chloritized)	◎		○		+											
8	BBR014	567.400	9,650.500	Silica-concrete sediment	◎					+										
9	BCR002	562.000	9,631.700	Rhyolite	◎															
10	BCR009	559.500	9,656.500	Quartz vein	○		○									+				
11	BDR003	560.500	9,635.150	Carbonate vein	+	?								+	◎					
12	BDR004	560.000	9,634.000	Phyllite (basalt?)	◎	+		+				+								
13	BDR008	567.000	9,643.100	Calcrete	◎					+										
14	BER033	560.521	9,643.440	Altered rhyolite	◎		+	○												
15	BER040	560.521	9,643.440	Quartz vein	◎			+			+			+						
16	IAR002	481.400	9,676.400	Meta-basalt		○											◎	○		
17	IBR002	482.500	9,671.150	Basalt (with sub-angular quartzite pebble)	◎												◎	○		
18	IF004	482.550	9,671.000	Fine alteration beds of basic tuff and quartzit	◎		+										○			
19	IF006	478.100	9,668.600	Banded iron formation	◎									+		◎				
20	MCR001	498.000	9,633.000	Banded iron formation	◎											○			?	?

◎ : Abundant ○ : Common + : Rare

Apx.11 Measurements of physical properties of rock samples

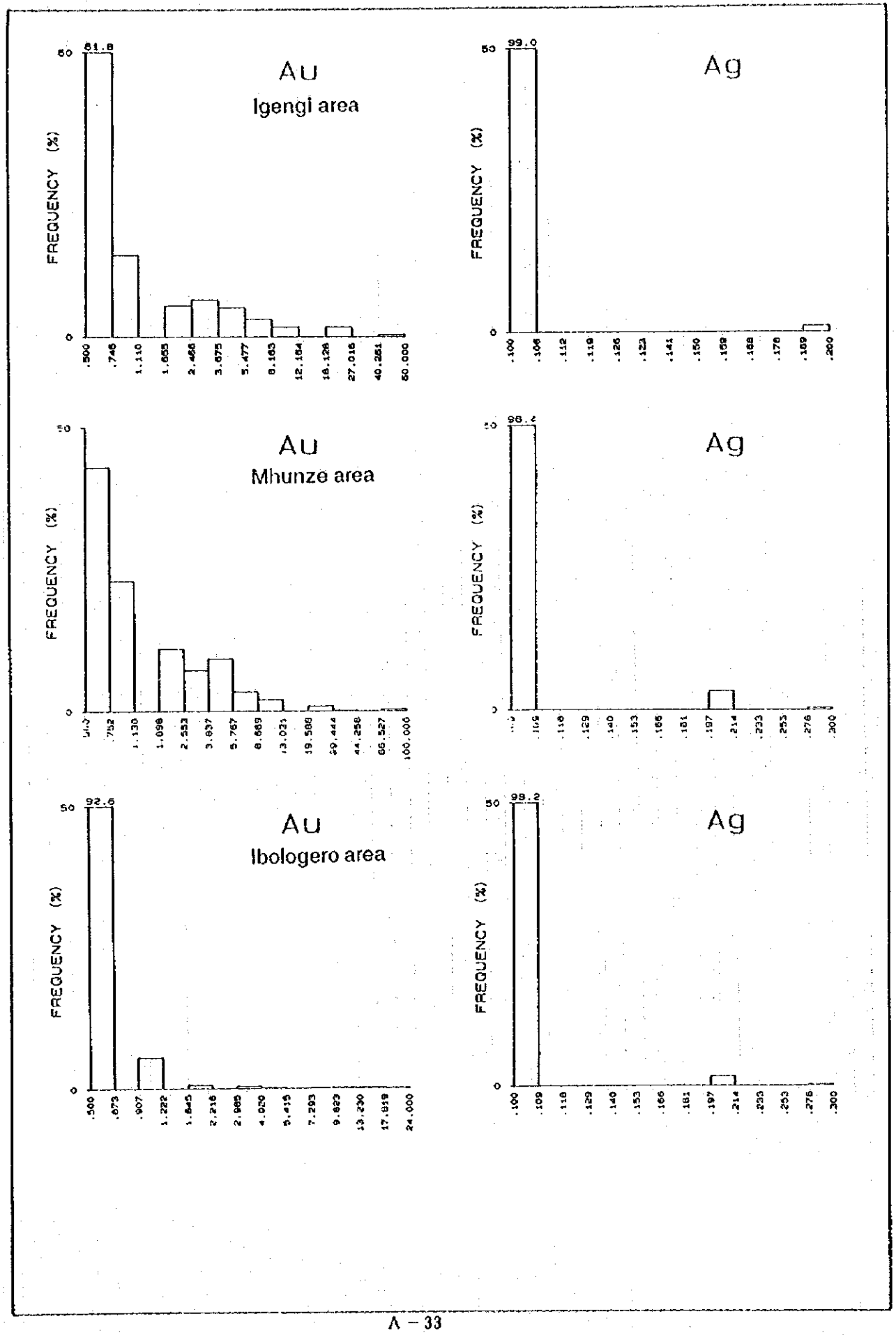
Serial No.	Sample No.	Coordination X	Coordination Y	Field name	Chargeability (mv/V)	Resistivity (ohm-m)
74	IF006	478.100	9668.600	BIF	18.4	18,170
83	MAR006	491.550	9636.200	BIF	8.3	9,330
81	MAR004	494.300	9632.000	BIF	3.7	885
19	BBR003	558.000	9631.600	Dolerite (intrusive)	10.3	8,437
32	BDR001	566.000	9630.900	Dolerite dyke	3.4	23,880
25	BBR019	560.700	9650.500	Granite	9.1	15,500
23	BBR016	565.100	9650.500	Granite (mafic m. altered to epidote	7.4	303,500
24	BBR018	560.900	9650.500	Granite (pyrite-disseminated)	11.6	26,640
12	BAR018	562.400	9654.000	Granite schistose	15.1	1,778
71	IF003	483.200	9678.950	Granodiorite	7.4	26,770
76	IF008	482.800	9673.925	Granodiorite	2.3	5,846
85	MAR008	491.700	9639.250	Meta-andesite?	18.6	166,800
65	IAR003	481.200	9676.500	Meta-basalt	7.7	117,500
77	IF009	481.500	9676.500	Meta-basalt	2.2	34,620
75	IF007	483.150	9673.500	Porphyritic dacite	4.7	18,950
13	BAR021	561.800	9649.000	Pyroxenite?	24.1	51,180
39	BDR016	564.400	9655.400	Quartz vein	4.0	24,780
57	BER042	560.521	9643.440	Quartz vein float	7.6	339,600
87	MDR001	495.000	9639.900	Quartzite	1.8	30,230
36	BDR011	560.521	9643.440	Rhyolite	3.8	13,860
18	BBR002	558.500	9632.750	Siliceous vesicular rock	4.3	74,240



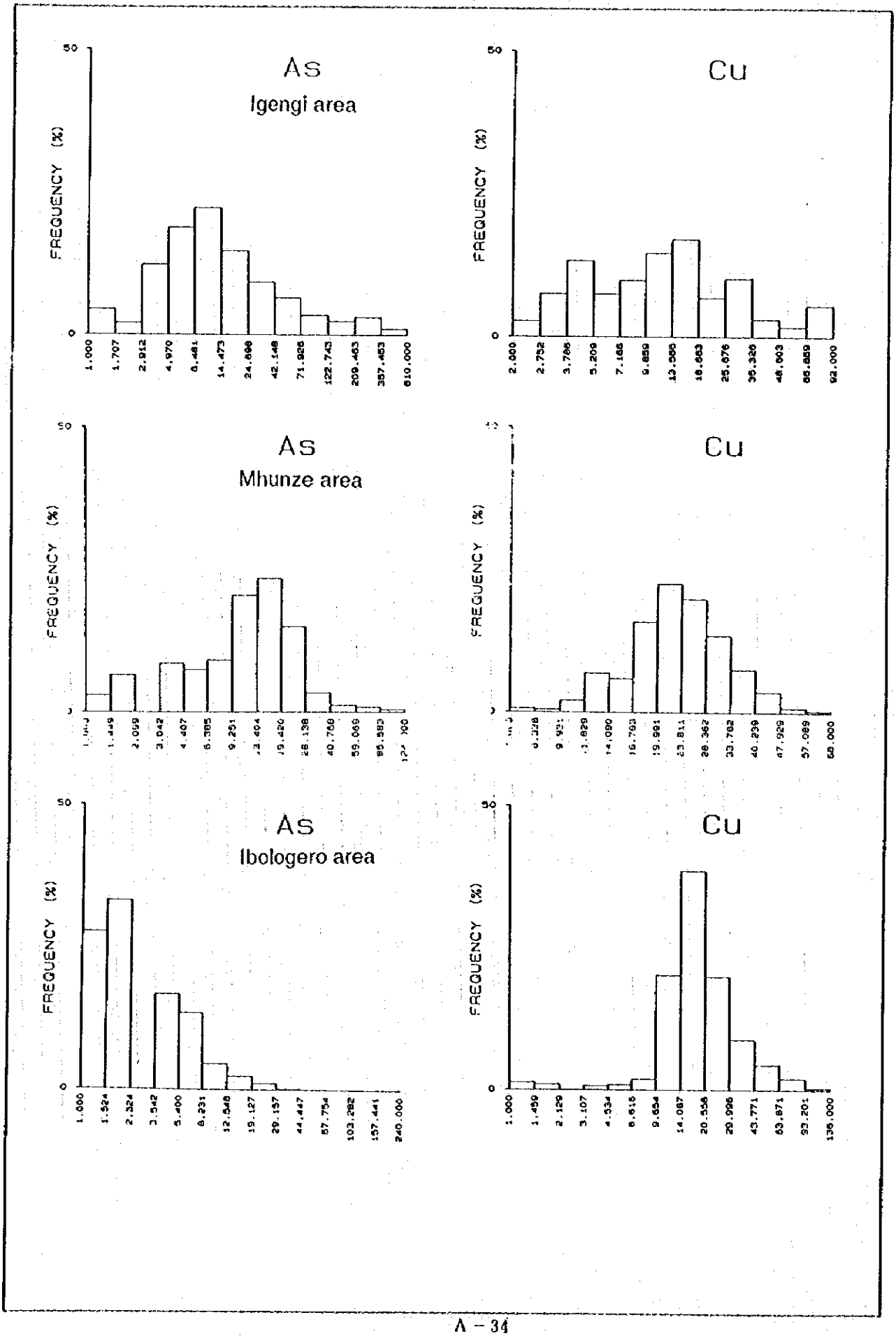


APX.12 Histograms of geochemical samples

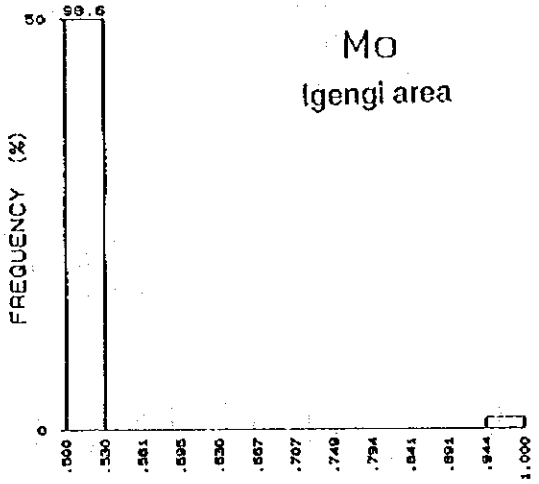
Apx. 12(1) Histograms of geochemical samples (Au and Ag)

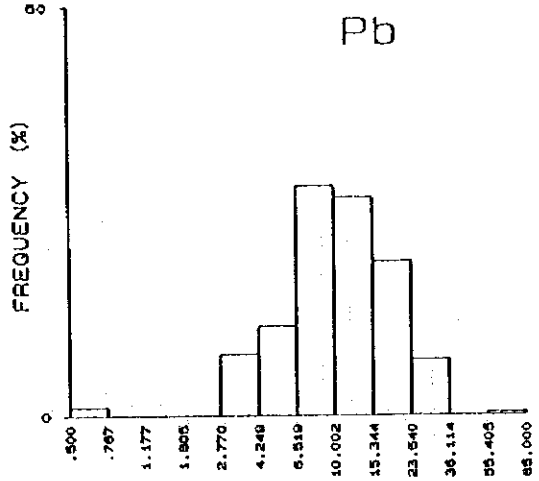


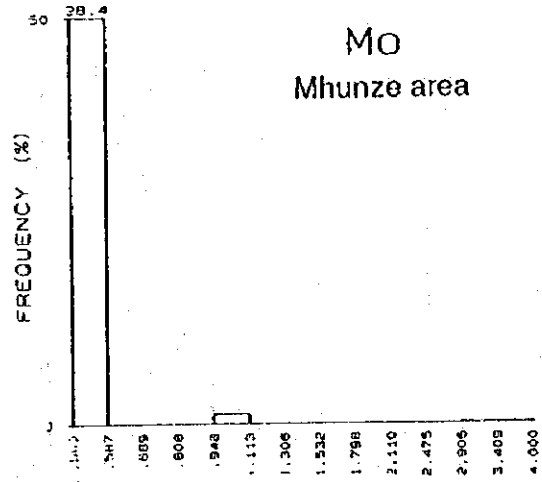
Apx. 12(2) Histograms of geochemical samples (As and Cu)

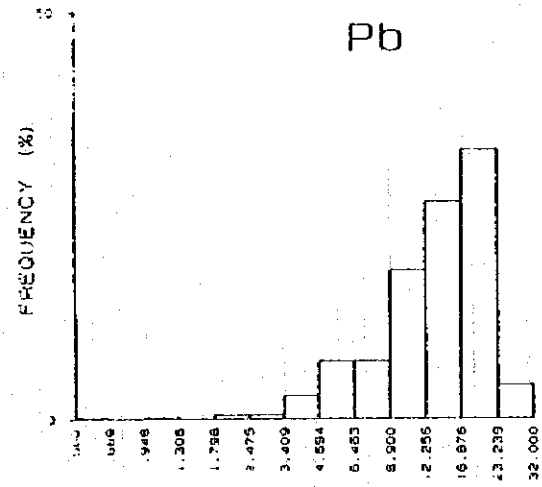


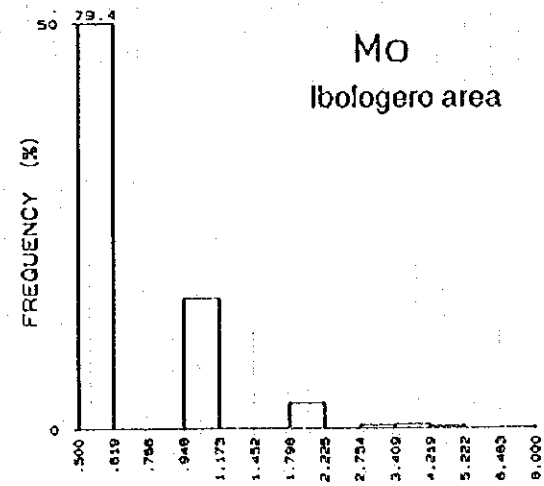
Apx. 12(3) Histograms of geochemical samples (Mo and Pb)

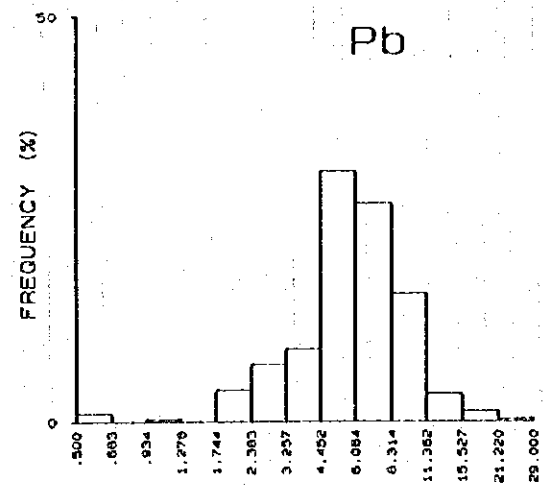




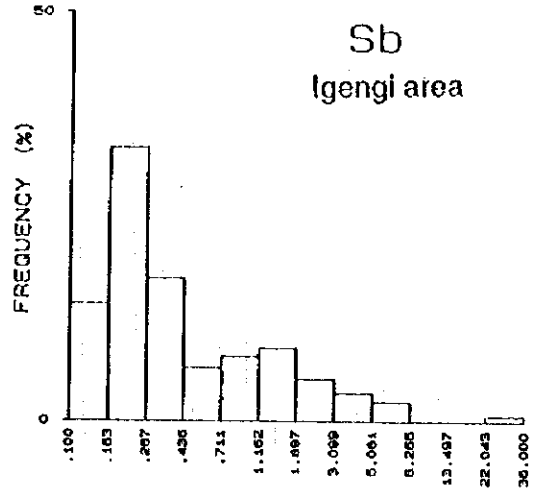


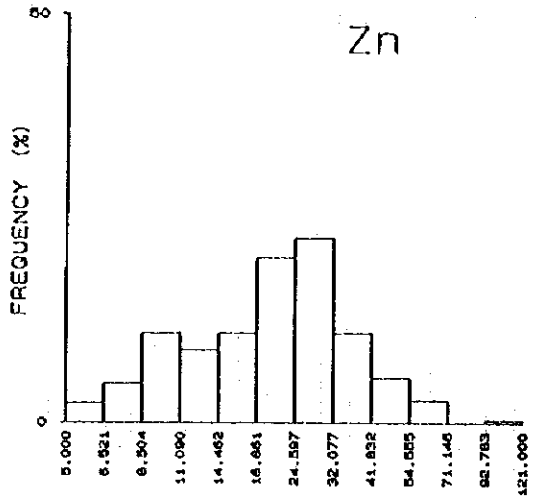


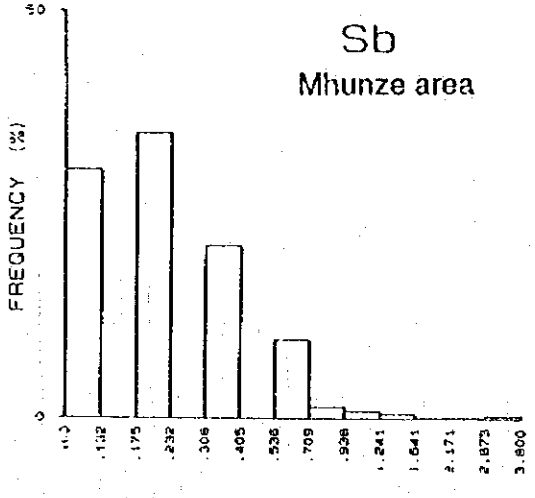


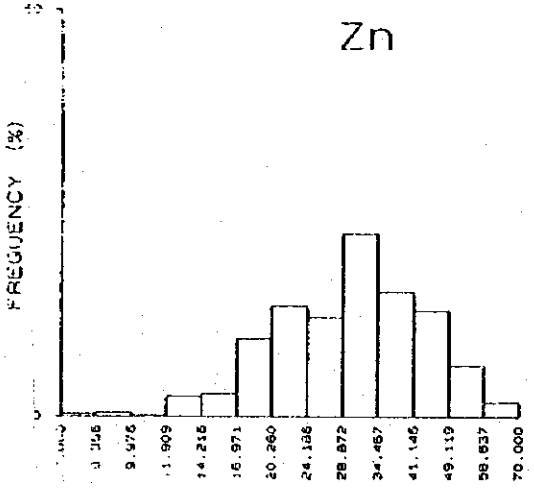


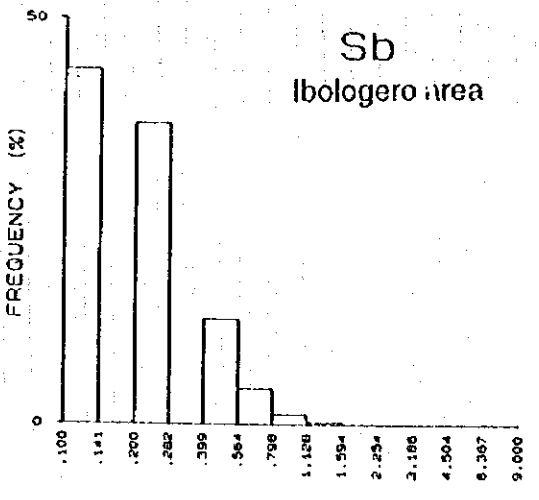
Apx. 12(4) Histograms of geochemical samples (Sb and Zn)

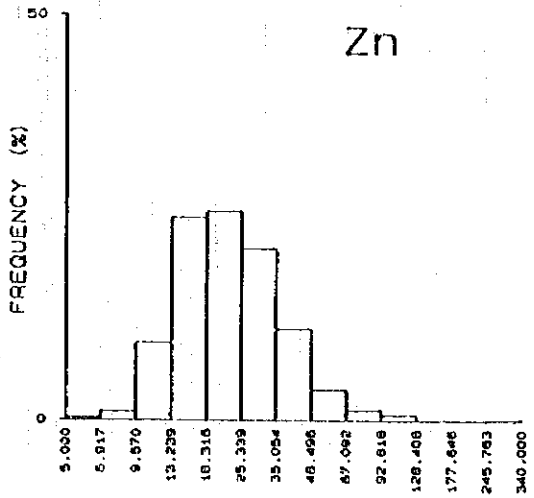




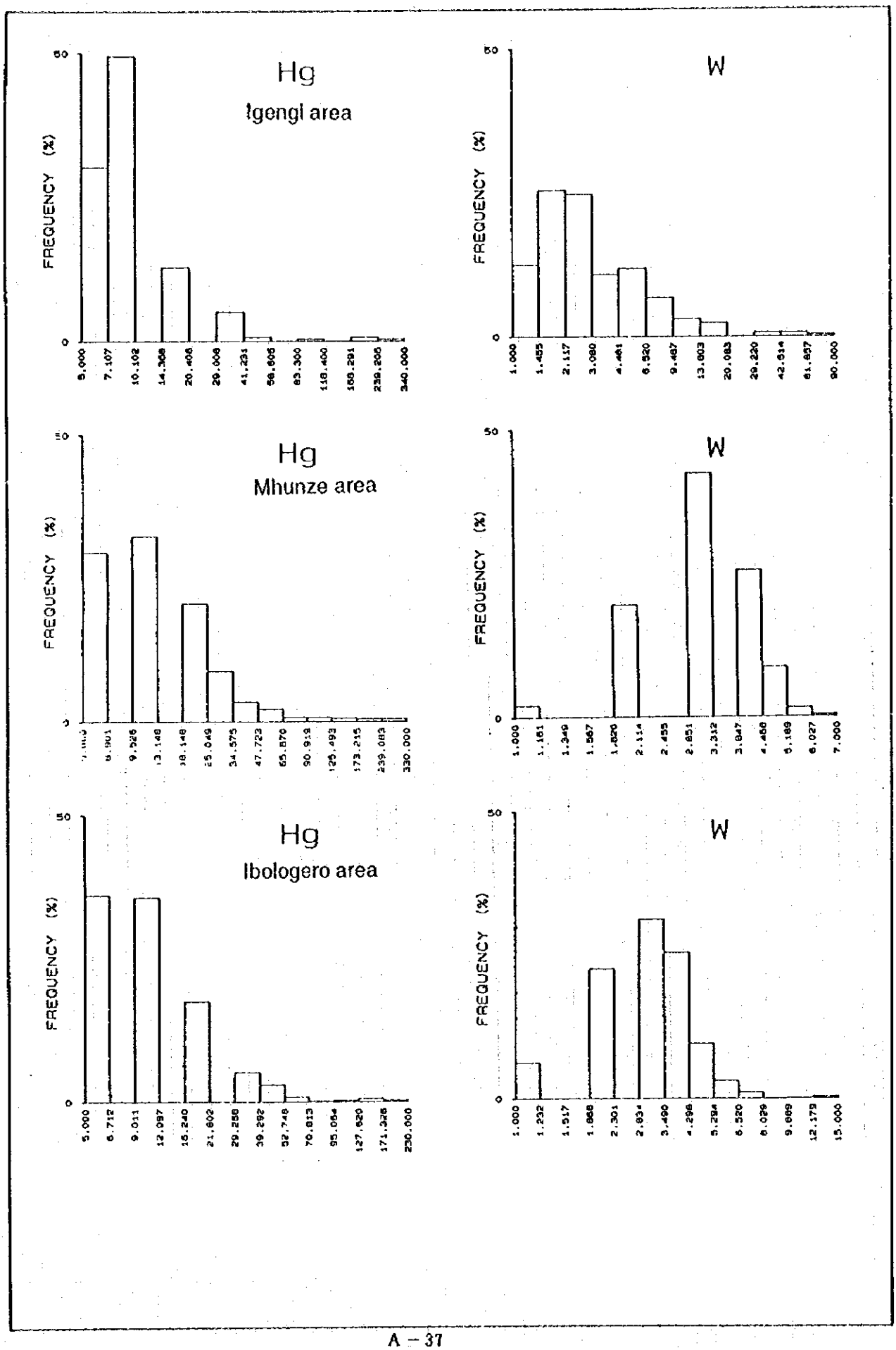




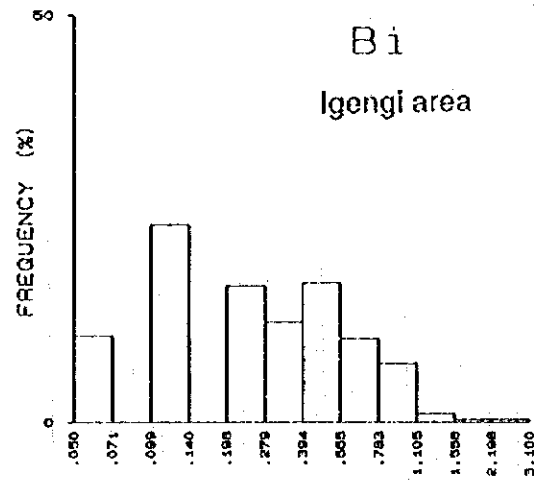


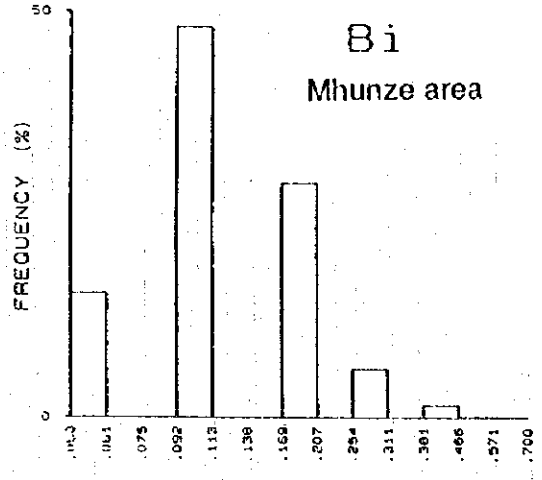


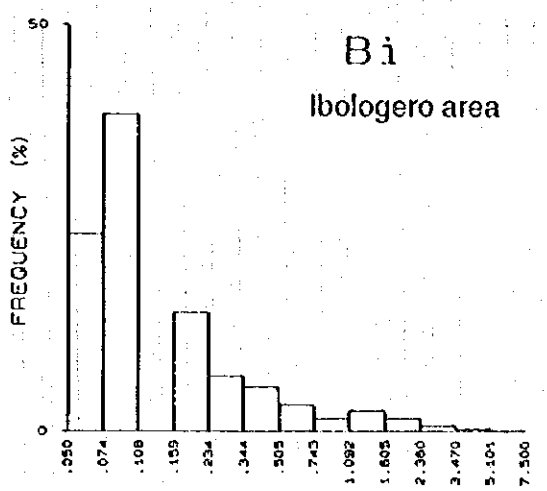
Apx. 12(5) Histograms of geochemical samples (Hg and W)



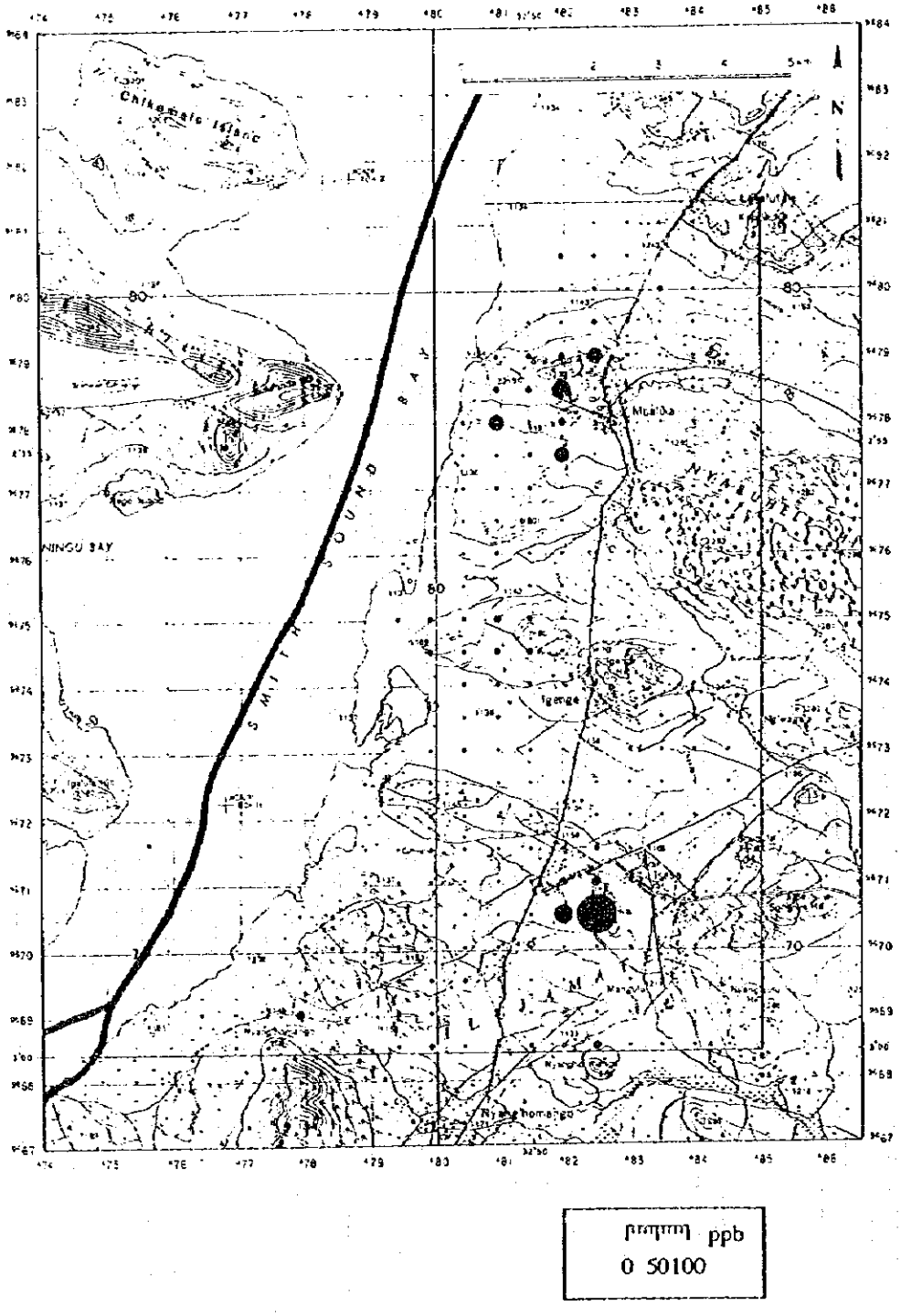
Apx. 12(6) Histograms of geochemical samples (Bi)



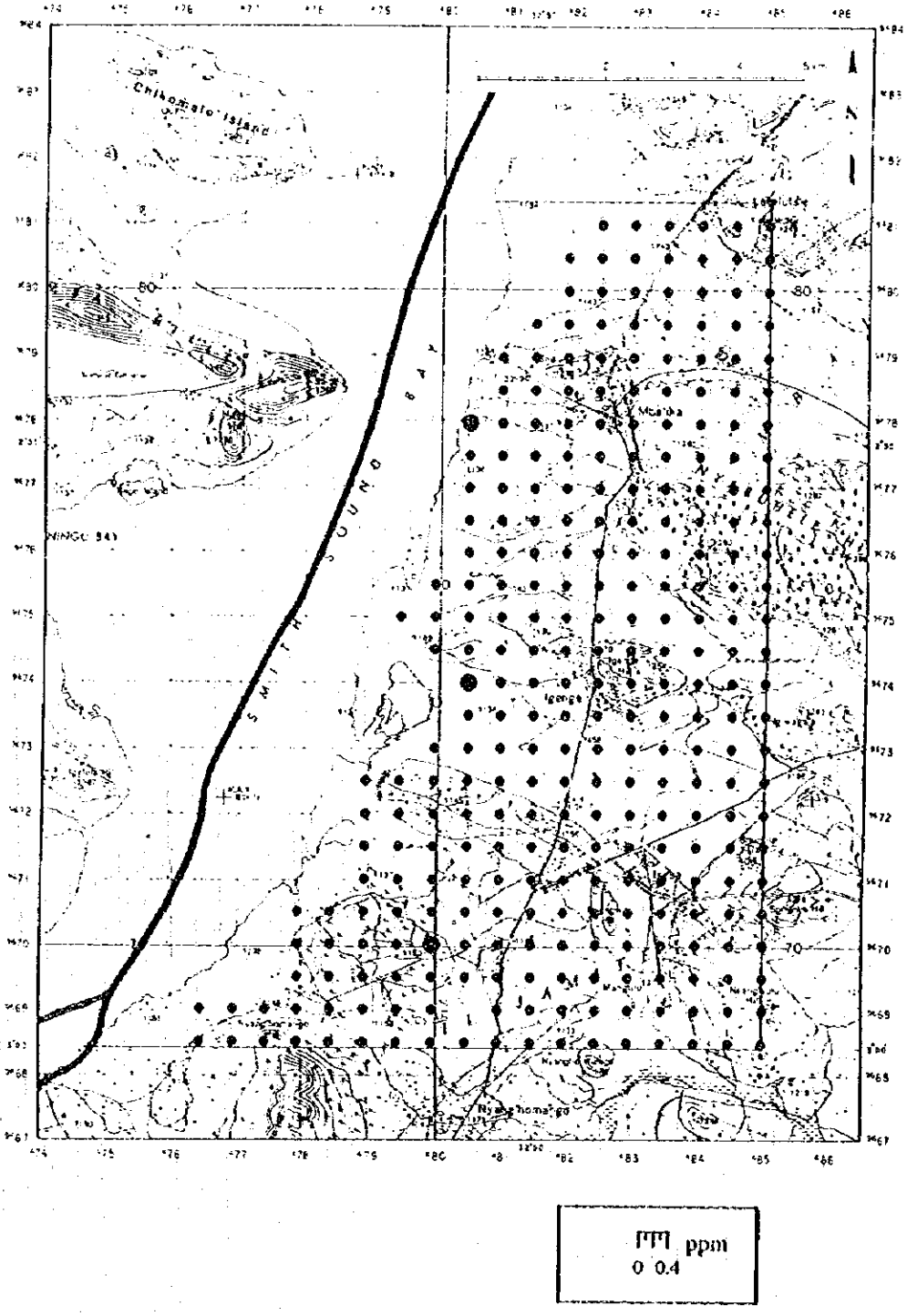




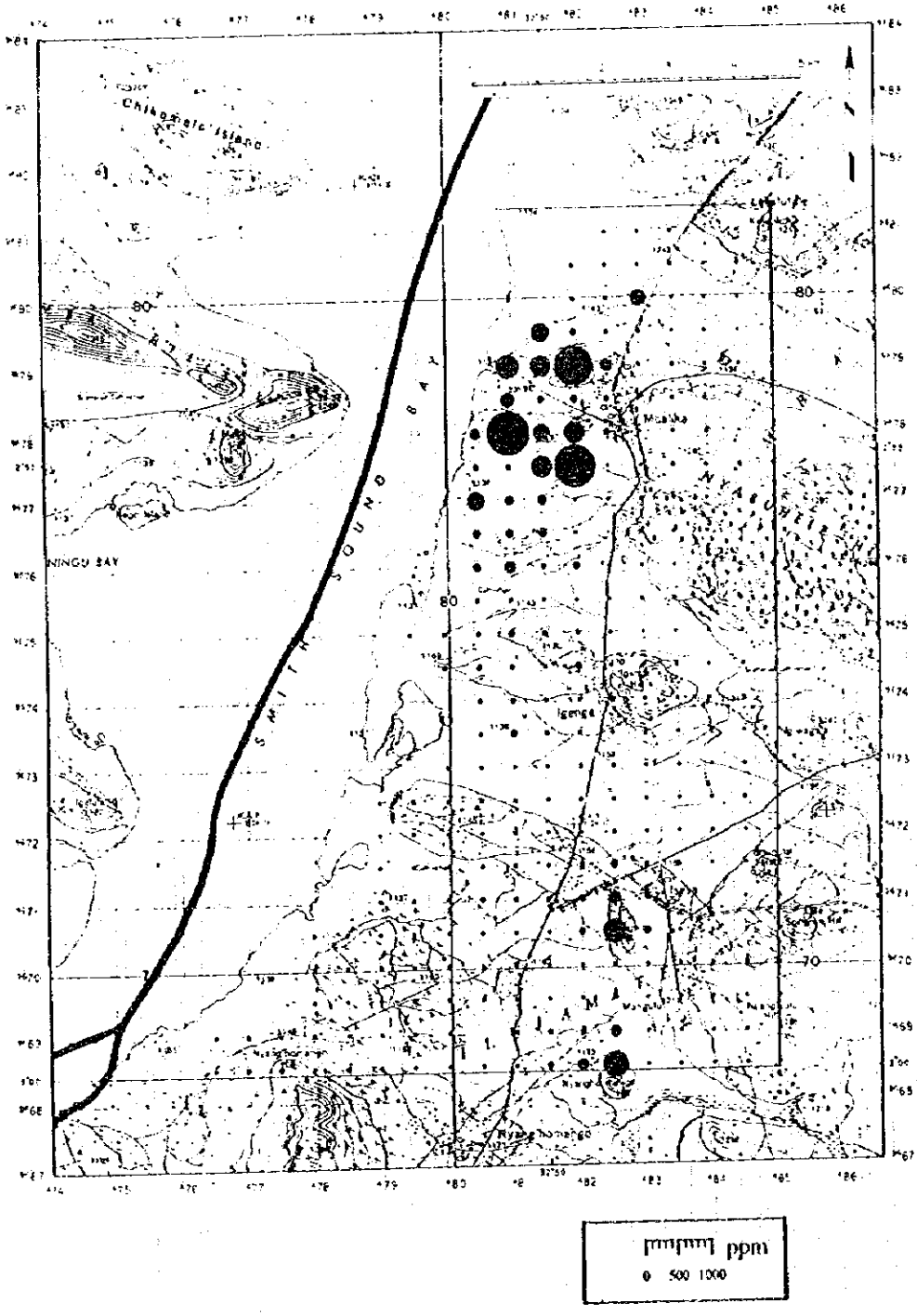
APX.13 Distributions of selected 11 elements in the survey area



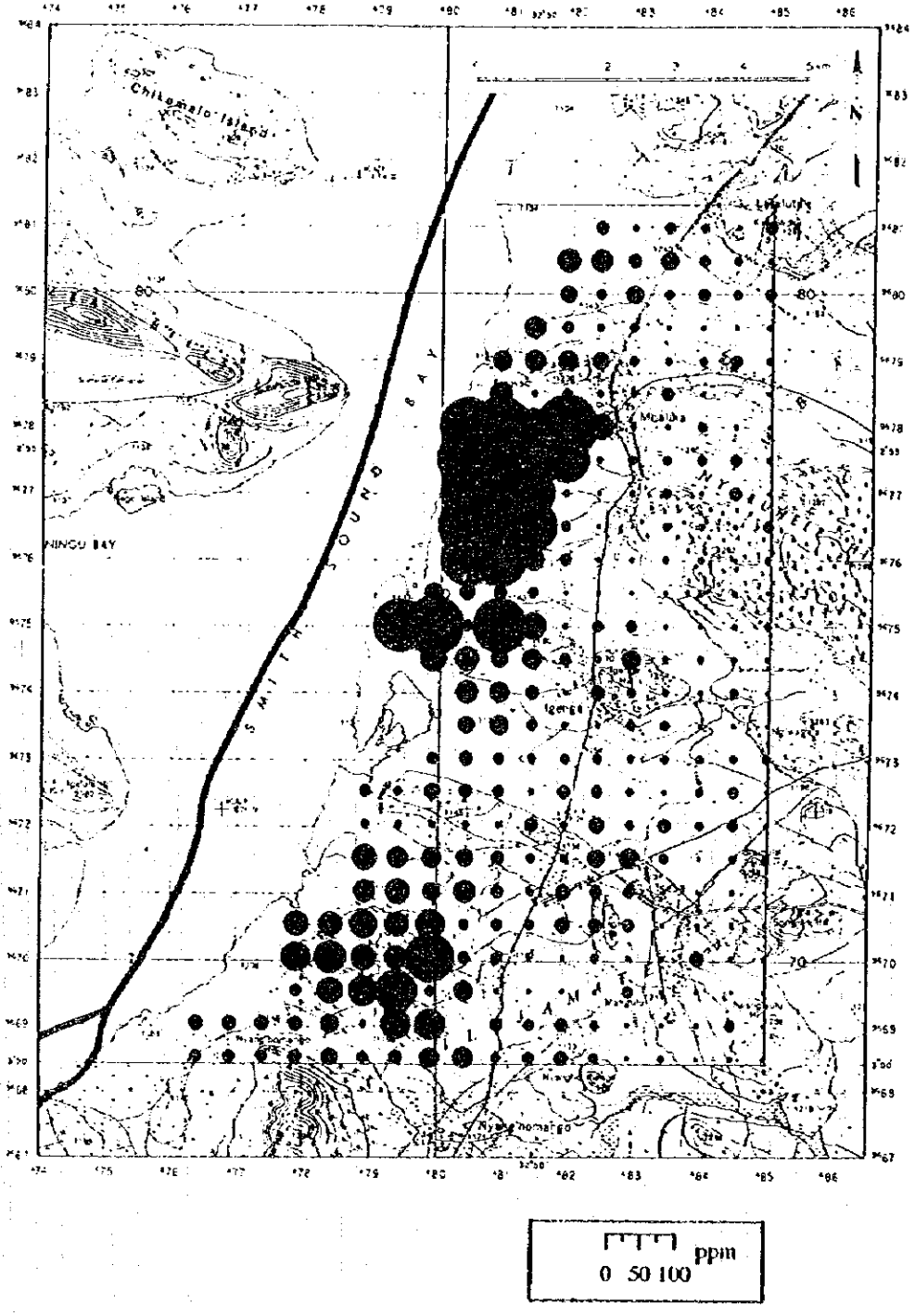
Apx. 13(1) Distribution of Au in the Igengi area



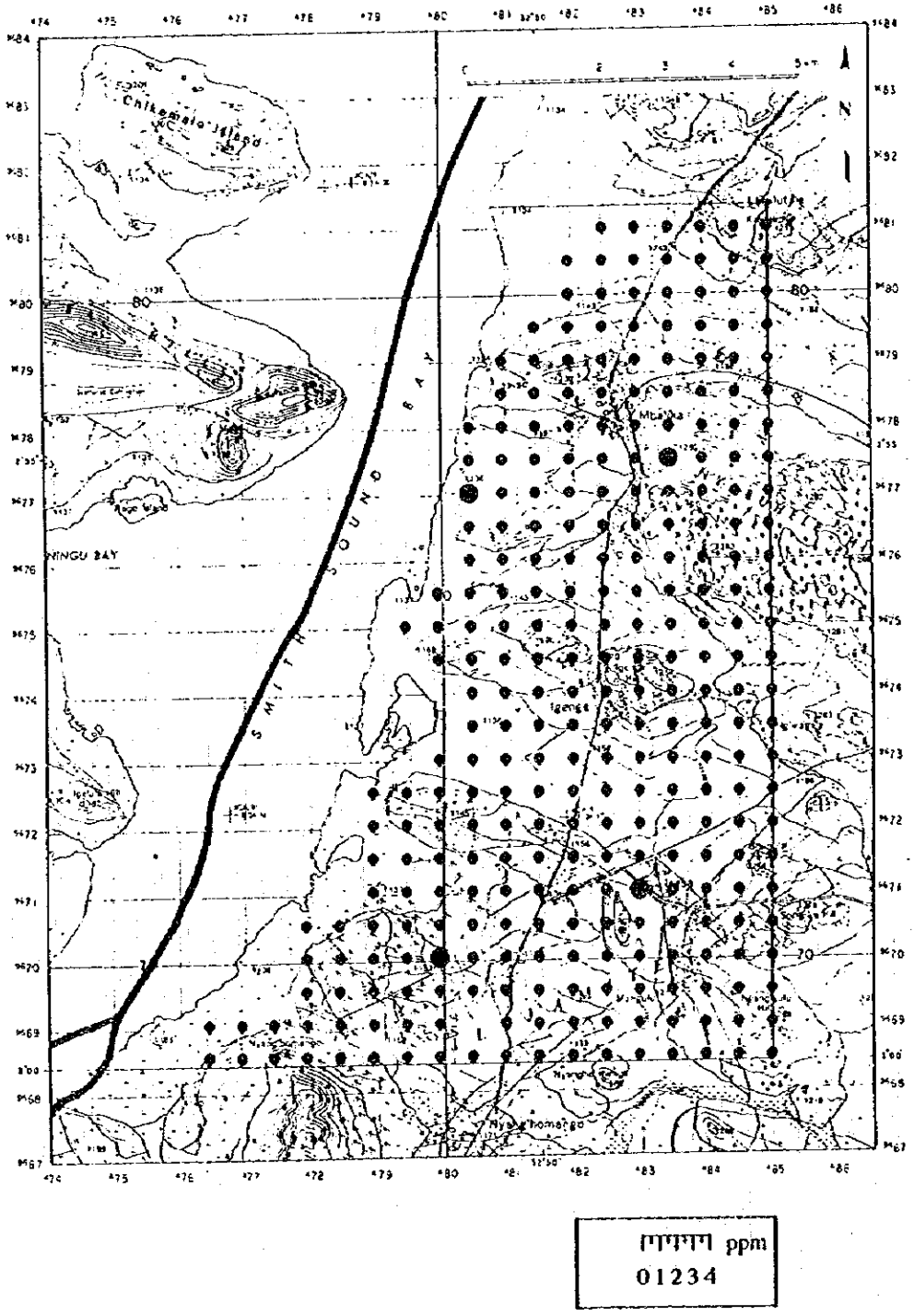
Apx. 13(1) Distribution of Ag in the Igengi area



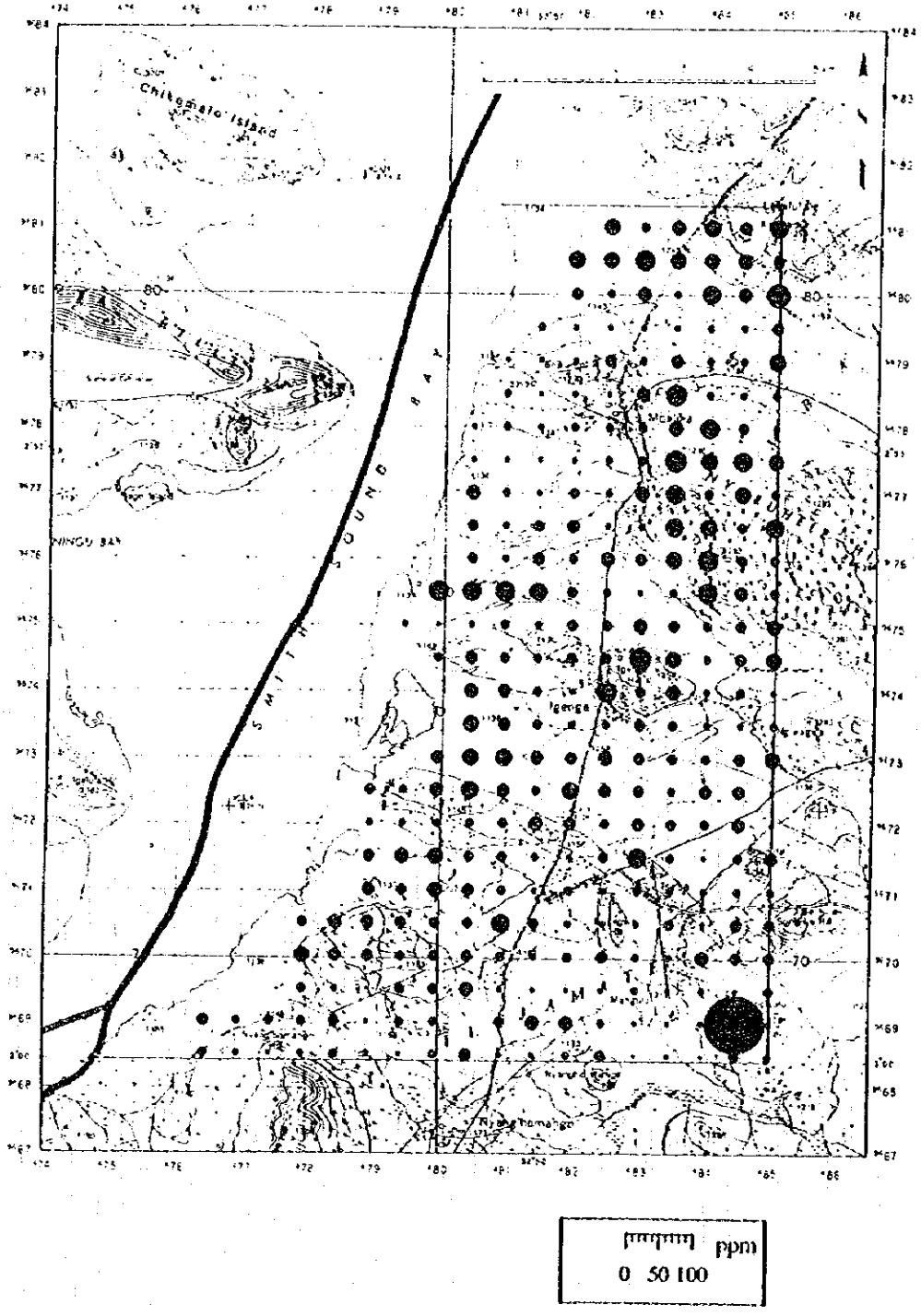
Apx. 13(1) Distribution of As in the Igengi area



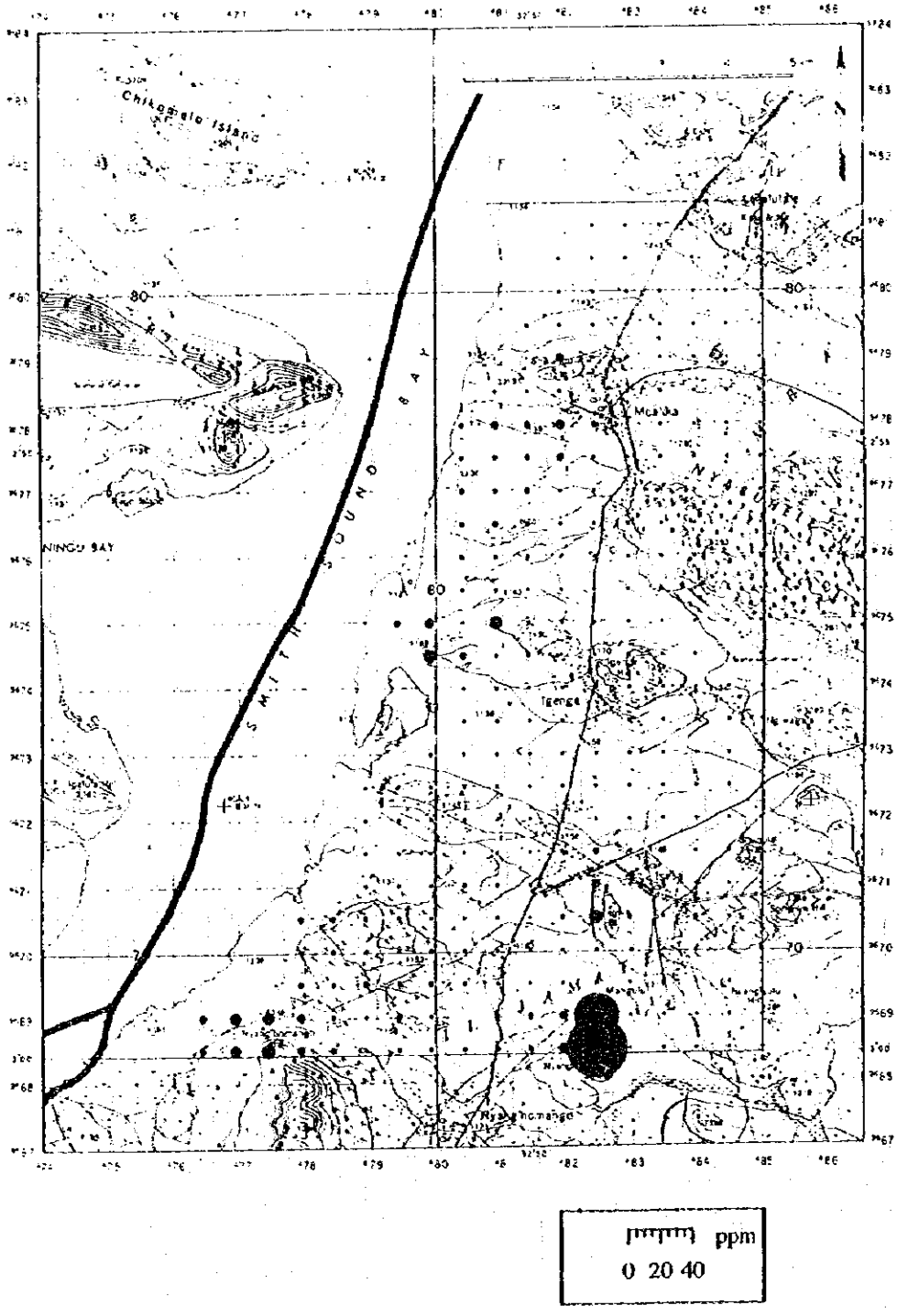
Apx. 13(1) Distribution of Cu in the Igengi area



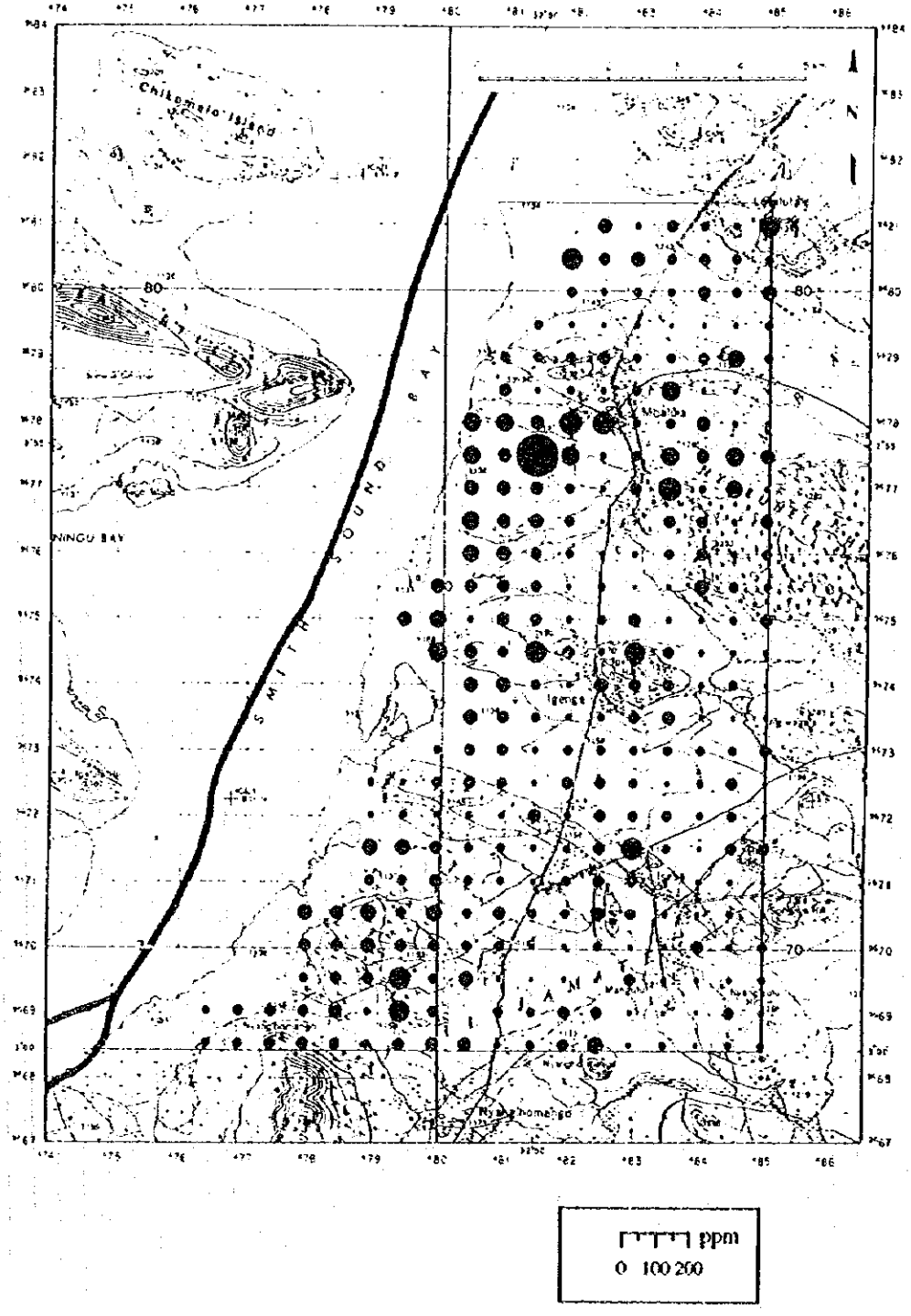
Apx. 13(1) Distribution of Mo in the Igengi area



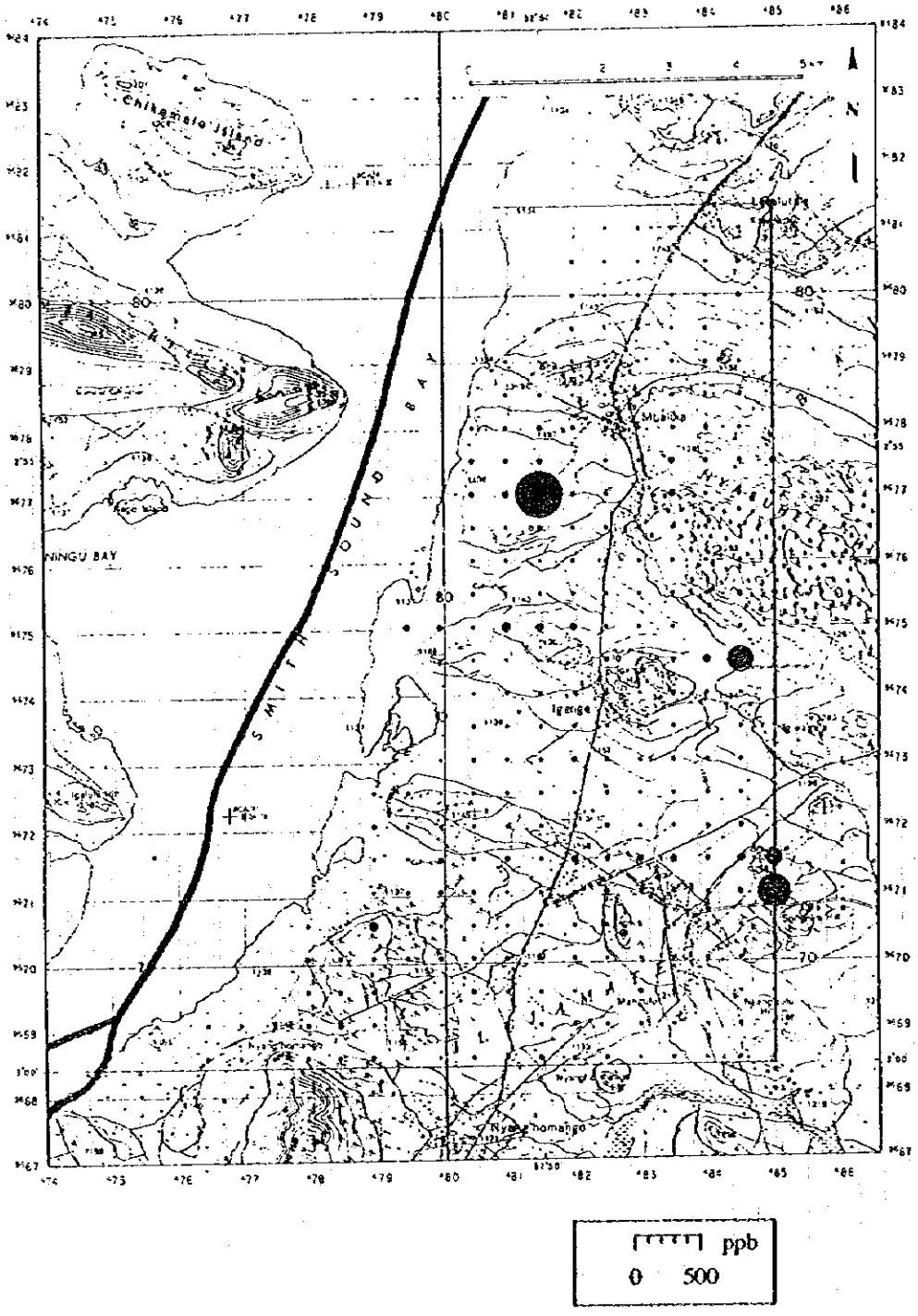
Apx. 13(1) Distribution of Pb in the Igengi area



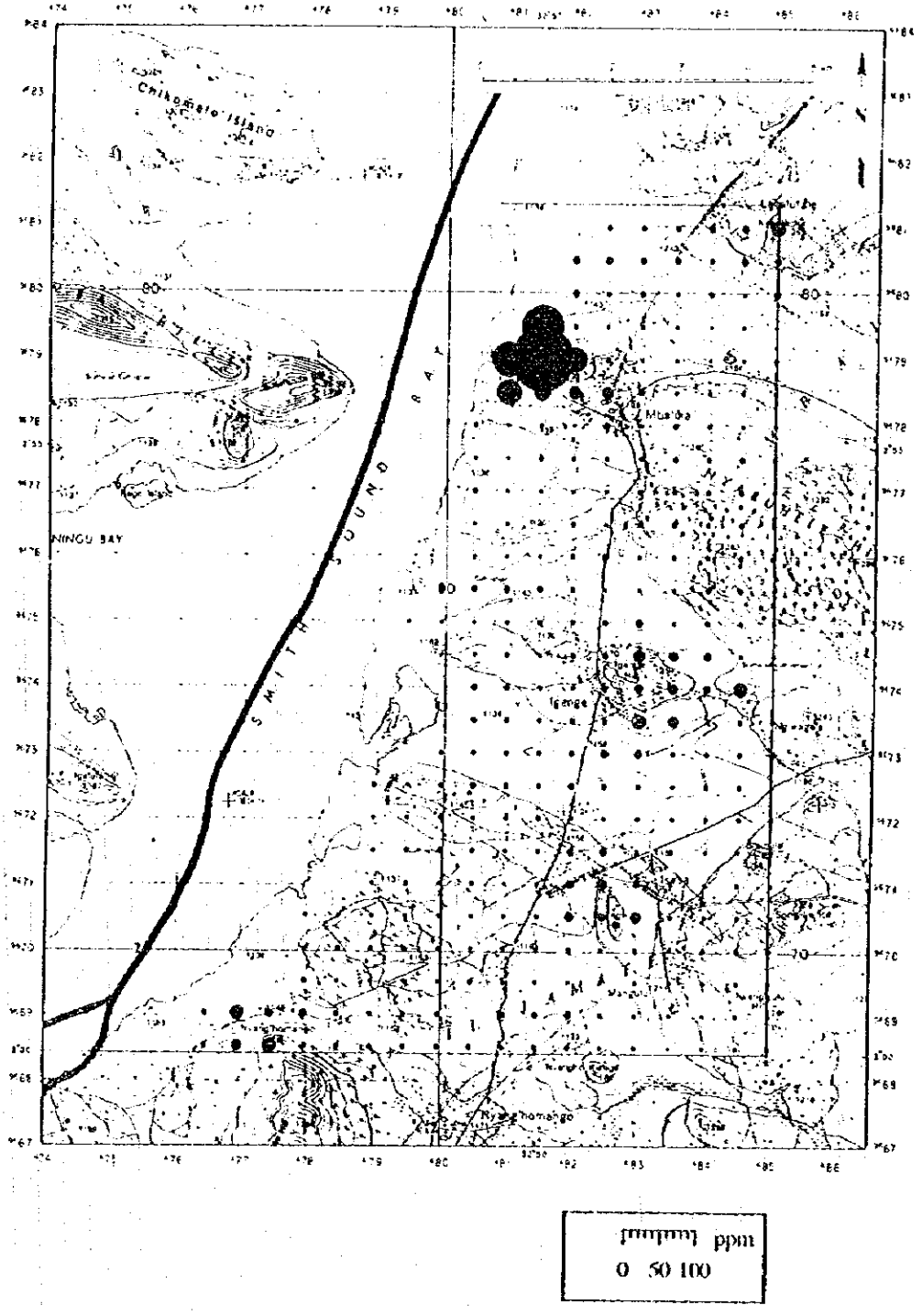
Apx. 13(1) Distribution of Sb in the Igengi area



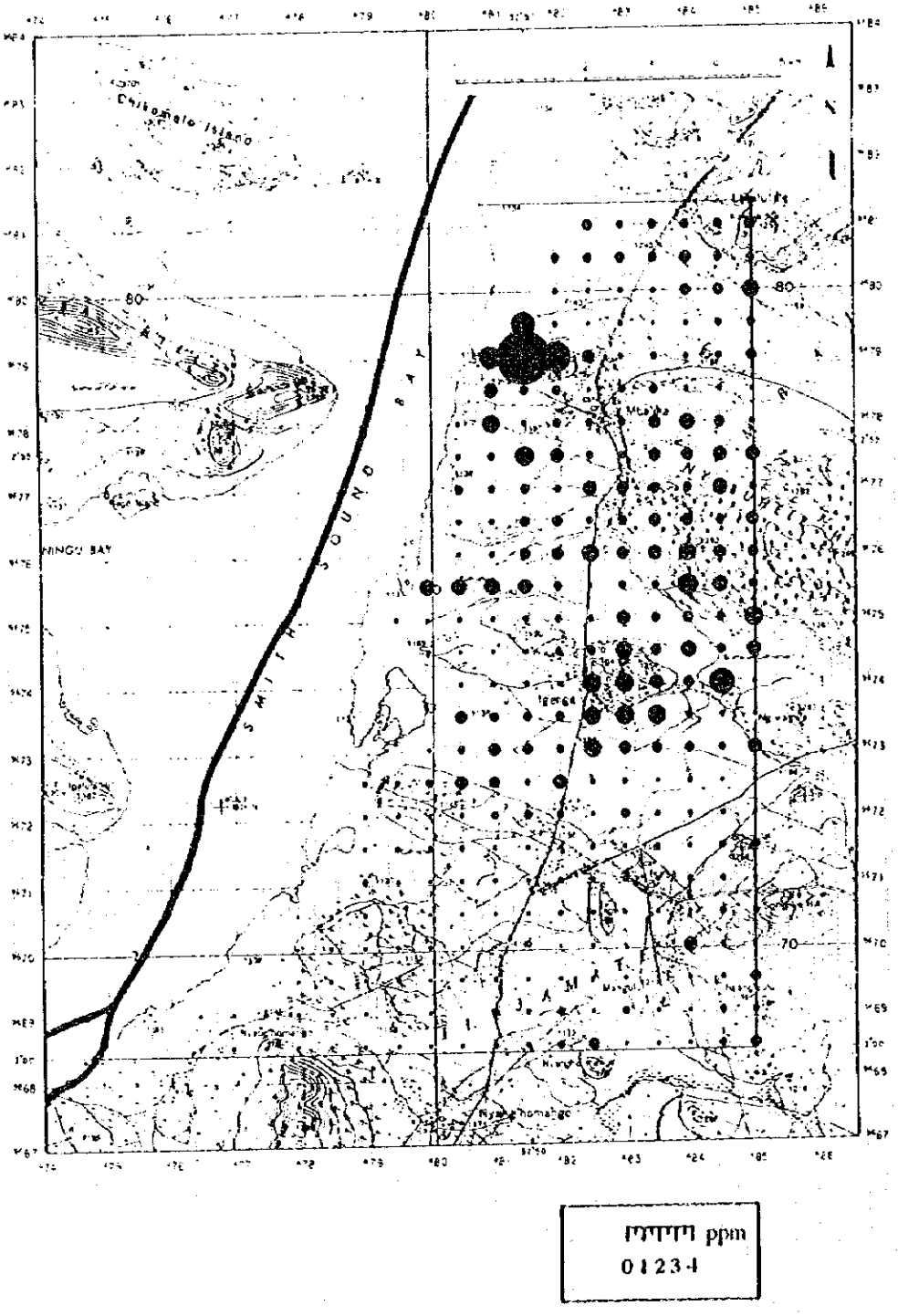
Apx. 13(1) Distribution of Zn in the Igengi area



Apx. 13(1) Distribution of Hg in the Igengi area



Apx. 13(1) Distribution of W in the Igengi area



Apx. 13(1) Distribution of Bi in the Igengi area