

Table 8.6.11 Cashflow on Modernization of Existing Facilities at Barones Plant (Case of 10% up Ag price)

(1000 US DOLLAR)

YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	TOTAL
+) NET REVENUE		132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	1.320
-) OPERATING COST		-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-490
OPERATING PROFIT		181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	1.810
-) DEPRECIATION		22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	220
-) INTEREST 5%		12	12	6	0	0	0	0	0	0	0	0	0	0	0	0	0	18
PROFIT BEFORE TAX		147	153	153	159	159	159	159	159	159	159	159	159	159	159	159	159	1.572
-) INCOME TAX 35%		51	54	54	56	56	56	56	56	56	56	56	56	56	56	56	56	553
PROFIT AFTER TAX		96	99	99	103	103	103	103	103	103	103	103	103	103	103	103	103	1.019
-) INITIAL INVESTMENT	231																	231
-) WORKING CAPITAL	231																	231
+) PRIMARY BANK LOANS		118	113	113	0	0	0	0	0	0	0	0	0	0	0	0	0	231
-) LOAN REPAYMENT		0	8	8	125	125	125	125	125	125	125	125	125	125	125	125	125	1.008
SURPLUS		113	113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEBT OUTSTANDING																		0
BEFORE INTEREST		130	127	127	125	125	125	125	125	125	125	125	125	125	125	125	125	1.026
NET CASH FLOW		-231	130	127	125	125	125	125	125	125	125	125	125	125	125	125	125	1.026
NET PRESENT VALUES		-218	116	107	99	93	86	78	74	70	66	66	66	66	66	66	66	656
OF N. C. F. AT		-214	111	101	92	85	79	73	68	63	58	54	54	54	54	54	54	569
DISCOUNT RATES:		-206	104	90	85	78	71	64	58	53	48	44	44	44	44	44	44	494
		-203	100	86	74	65	57	50	45	40	36	36	36	36	36	36	36	430
		-199	97	81	69	60	51	44	38	33	28	24	24	24	24	24	24	375
INTERNAL RATE OF RETURN:																		54.4 %

Table 8. 6. 12 Cashflow on Modernization of Existing Facilities at Barones Plant (Case of 10% down Ag price)

(1000 US DOLLAR)

YEAR	1	2	3	4	5	6	T	8	9	10	11	12	13	14	15	16	17	TOTAL
+) NET REVENUE	120	120	120	120	120	120	120	120	120	120	120	0	0	0	0	0	0	1,200
-) OPERATING COST	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	-49	0	0	0	0	0	0	-490
OPERATING PROFIT	169	169	169	169	169	169	169	169	169	169	169	0	0	0	0	0	0	1,690
-) DEPRECIATION	22	22	22	22	22	22	22	22	22	22	22	0	0	0	0	0	0	220
-) INTEREST 5%	12	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
PROFIT BEFORE TAX	135	141	141	147	147	147	147	147	147	147	147	0	0	0	0	0	0	1,452
-) INCOME TAX 35%	47	48	49	51	51	51	51	51	51	51	51	0	0	0	0	0	0	504
PROFIT AFTER TAX	88	92	92	96	96	96	96	96	96	96	96	0	0	0	0	0	0	948
-) INITIAL INVESTMENT	231																0	231
-) WORKING CAPITAL	231																0	231
+) PRIMARY BANK LOANS		110	114	7	0	0	0	0	0	0	0	0	0	0	0	0	0	231
-) LOAN REPAYMENT		0	0	111	118	118	118	118	118	118	118	0	0	0	0	0	0	937
SURPLUS		121	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEBT OUTSTANDING																		0
BEFORE INTEREST	-231	122	120	118	118	118	118	118	118	118	118	0	0	0	0	0	0	955
NET CASH FLOW	-216	109	101	93	88	83	78	74	70	66	62	0	0	0	0	0	0	607
NET PRESENT VALUES	6%	-214	105	87	80	74	69	64	59	55	51	0	0	0	0	0	0	524
DF N. C. F. AT	10%	-210	101	90	81	73	67	61	55	50	45	0	0	0	0	0	0	454
DISCOUNT RATES:	12%	-206	97	85	75	67	60	53	48	43	38	0	0	0	0	0	0	394
	14%	-203	94	81	70	61	54	47	41	36	32	0	0	0	0	0	0	342
	16%	-199	91	77	65	48	42	36	31	27	23	0	0	0	0	0	0	297
INTERNAL RATE OF RETURN:	51.0 %																	

Table 8.6.13 Cashflow on Modernized Plant (150 t/day) at Barones  
(Case of standard Ag price)

(1000 US DOLLAR)

YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	TOTAL		
BARONES 150T/D MODERNIZED PLANT AG=569.281																				
+) NET REVENUE			1,746	1,746	1,746	1,746	1,746	1,746	1,746	1,746	1,746	1,746	1,746	1,746	1,746	1,746	1,746	1,746	17,746	
-) OPERATING COST			1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	17,746
OPERATING PROFIT			727	727	727	727	727	727	727	727	727	727	727	727	727	727	727	727	727	15,285
-) DEPRECIATION			525	525	525	525	525	525	525	525	525	525	525	525	525	525	525	525	525	10,305
-) INTEREST 5%		151	310	293	272	249	225	200	174	146	118	89	60	36	12	0	0	0	0	5,745
PROFIT BEFORE TAX			-108	-91	-70	-47	-23	2	28	56	84	113	133	158	182	200	220	240	260	2,335
-) INCOME TAX 35%			0	0	0	0	0	1	10	20	29	40	49	58	66	75	84	93	102	2,376
PROFIT AFTER TAX			-108	-91	-70	-47	-23	1	18	36	55	73	89	107	126	145	164	183	202	2,152
-) INITIAL INVESTMENT	3,024	3,024	85																	6,948
-) WORKING CAPITAL																				0
+) PRIMARY BANK LOANS	3,024	3,175	332	434	455	478	502	526	543	561	580	598	616	634	652	670	688	706	724	6,199
-) LOAN REPAYMENT			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,199
SURPLUS			5,867	5,433	4,978	4,500	3,998	3,472	2,929	2,368	1,788	1,190	722	238	0	0	0	0	0	1,360
DEBT OUTSTANDING	3,024	6,199																		0
BEFORE INTEREST																				-85
NET CASH FLOW	-3,024	-3,024	642	727	727	727	727	726	717	707	688	687	687	687	687	687	687	687	687	592
NET PRESENT VALUES OF N.C.F. AT	5%	-2,853	539	576	543	513	483	456	424	395	368	341	248	230	213	200	220	204	204	3,695
	8%	-2,800	510	534	495	458	424	392	359	327	299	273	194	177	161	148	160	148	148	-481
	10%	-2,749	482	497	451	410	373	339	304	273	245	219	153	137	122	110	117	110	110	-1,016
	12%	-2,700	457	462	413	368	329	293	259	228	201	176	121	106	93	83	85	85	85	-1,436
	14%	-2,653	433	430	378	331	291	255	220	191	165	143	96	83	72	62	64	64	64	-1,766
	16%	-2,607	411	402	346	298	257	221	189	160	136	116	77	65	55	47	47	47	47	-2,026
INTERNAL RATE OF RETURN:																				6.5 %

Table 8.6.14 Cashflow on Modernized Plant (150 t/day) at Barones  
(Case of 10% up Ag price)

(1000 US DOLLAR)

YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	TOTAL	
+ NET REVENUE			1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,838	27,570
-) OPERATING COST			1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	15,285
-) DEPRECIATION		151	819	819	819	819	819	819	819	819	819	819	819	819	819	819	819	819	12,285
-) INTEREST 5%			310	289	262	235	207	178	148	117	85	52	18	0	0	0	0	0	5,745
PROFIT BEFORE TAX			-16	5	32	59	87	116	146	177	209	242	270	298	326	354	382	410	2,052
-) INCOME TAX 35%				2	11	21	30	41	51	62	73	85	96	107	118	129	140	151	4,839
PROFIT AFTER TAX			-16	3	21	38	57	75	95	115	136	157	174	191	209	228	246	265	1,630
-) INITIAL INVESTMENT	3,024	3,024	85																6,948
-) WORKING CAPITAL				528	546	563	582	600	620	640	661	682	703	724	745	766	787	808	6,199
+ PRIMARY BANK LOANS	3,024	3,175	424	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,199
-) LOAN REPAYMENT			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SURPLUS			5,775	5,247	4,701	4,138	3,556	2,956	2,336	1,696	1,035	333	0	0	0	0	0	0	2,555
DEBT OUTSTANDING	3,024	6,199																	0
BEFORE INTEREST			734	817	808	798	789	778	768	757	746	734	723	711	699	687	675	663	4,607
NET CASH FLOW	-3,024	-3,024	734	817	808	798	789	778	768	757	746	734	723	711	699	687	675	663	4,607
NET PRESENT VALUES	6%	-2,853	616	647	604	563	525	488	455	423	393	365	339	314	290	267	245	223	755
OF W. C. F. AT	8%	-2,800	583	601	550	503	460	420	384	351	320	291	266	242	219	196	176	156	-5
DISCOUNT RATES:	10%	-2,749	551	558	502	450	405	363	326	292	261	234	211	189	166	149	123	103	-602
	12%	-2,700	522	519	458	404	357	314	277	244	214	188	166	144	121	104	82	65	-1,073
	14%	-2,653	495	484	420	364	315	273	236	204	177	152	131	111	91	70	52	35	-1,446
	16%	-2,607	470	451	385	328	279	237	202	172	146	124	104	84	61	43	27	11	-1,741

INTERNAL RATE OF RETURN: 8.0 %

Table 8.6.15 Cashflow on Modernized Plant (200 t/day) at Barones  
(Case of standard Ag price)

(1000 US DOLLAR)

YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	TOTAL	
+ NET REVENUE			2,328	2,328	2,328	2,328	2,328	2,328	2,328	2,328	2,328	2,328	2,328	2,328	2,328	2,328	2,328	2,328	34,920
- OPERATING COST			1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	19,830
OPERATING PROFIT			1,006	1,006	1,006	1,006	1,006	1,006	1,006	1,006	1,006	1,006	1,006	1,006	1,006	1,006	1,006	1,006	15,090
- DEPRECIATION			577	577	577	577	577	577	577	577	577	577	577	577	577	577	577	577	6,315
- INTEREST 5%		166	341	315	282	249	214	178	141	103	63	23	0	0	0	0	0	0	2,075
PROFIT-BEFORE TAX			88	114	147	180	215	251	288	326	366	406	446	487	527	567	607	647	6,866
- INCOME TAX 35%			31	40	51	63	75	88	101	114	128	142	157	171	184	198	211	224	2,403
PROFIT AFTER TAX			57	74	96	117	140	163	187	212	238	264	289	314	339	363	387	413	4,463
- INITIAL INVESTMENT	3,326	3,326																	6,652
- WORKING CAPITAL	3,326	3,482																	6,818
+ PRIMARY BANK LOANS				651	673	694	717	740	764	789	815	841	866	892	917	942	967	992	6,818
- LOAN REPAYMENT				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,818
SURPLUS			6,294	5,643	4,970	4,276	3,559	2,819	2,055	1,266	451	390	329	268	207	146	85	30	3,960
DEBT OUTSTANDING																			0
BEFORE INTEREST																			0
NET CASH FLOW	-3,326	-3,326	865	966	955	943	931	918	905	892	878	864	850	836	822	808	794	780	6,035
NET PRESENT VALUES OF N.C.F. AT 6%	-3,138	-2,960	726	765	714	665	619	576	536	498	463	429	396	364	332	300	270	240	1,382
OF N.C.F. AT 8%	-3,080	-2,852	687	710	650	594	543	496	453	413	377	343	310	278	246	215	184	153	461
OF N.C.F. AT 10%	-3,024	-2,749	650	660	593	532	478	428	384	344	308	275	242	210	178	146	114	82	263
OF N.C.F. AT 12%	-2,970	-2,651	616	614	542	478	421	371	326	287	252	220	188	156	124	92	60	28	236
OF N.C.F. AT 14%	-2,918	-2,559	584	572	496	430	372	322	278	241	208	179	147	115	83	51	19	1	236
OF N.C.F. AT 16%	-2,867	-2,472	554	534	455	387	329	280	238	202	172	146	114	82	50	18	6	0	236
INTERNAL RATE OF RETURN:																			9.2 %

Table 8. 6. 16 Cashflow on Modernized Plant (200 t/day) at Barones  
(Case of 10% down Ag price)

(1000 US DOLLAR)

YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	TOTAL	
+ NET REVENUE			2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	33,135
- OPERATING COST			1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	19,830
- OPERATING PROFIT			887	887	887	887	887	887	887	887	887	887	887	887	887	887	887	887	13,305
- DEPRECIATION		166	577	577	577	577	577	577	577	577	577	577	577	577	577	577	577	109	6,315
- INTEREST 8%			341	319	291	261	231	199	167	133	99	63	26	0	0	0	0	0	2,296
- PROFIT BEFORE TAX			-31	-9	19	49	79	111	143	177	211	247	283	315	347	378	406	434	4,860
- INCOME TAX 35%			0	0	7	17	28	39	50	62	74	86	98	110	122	134	146	158	1,714
- PROFIT AFTER TAX			-31	-9	12	32	51	72	93	115	137	161	185	205	225	244	262	272	3,146
- INITIAL INVESTMENT	3,326	3,326																	5,652
- WORKING CAPITAL	3,326	3,492	110																6,818
- LOAN REPAYMENT			436	568	589	609	628	649	670	692	714	738	762	785	807	829	851	873	6,818
- SURPLUS			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- DEBT OUTSTANDING	3,326	6,818	6,382	5,814	5,225	4,616	3,988	3,339	2,669	1,977	1,263	525	0	0	0	0	0	0	2,643
BEFORE INTEREST	-3,326	-3,326	777	887	880	870	859	848	837	825	813	801	789	777	765	753	741	729	4,939
NET CASH FLOW	-3,138	-2,960	652	703	658	613	571	532	495	461	428	398	369	341	313	285	257	229	746
NET PRESENT VALUES	6%	-3,080	617	652	599	548	501	458	419	382	349	318	289	261	233	205	177	149	-80
OF N.C.F. AT	8%	-3,024	584	606	546	491	441	396	355	318	285	255	227	200	172	144	116	88	-728
DISCOUNT RATES:	12%	-2,970	553	564	499	441	389	342	302	266	234	205	177	150	122	94	66	38	-1,239
	14%	-2,918	524	525	457	396	343	297	257	223	192	165	137	110	82	54	26	-1	-1,643
	16%	-2,867	498	490	419	357	304	259	220	187	159	135	107	79	51	23	-5	-58	-1,962
INTERNAL RATE OF RETURN:																			7.8 %

Table 8.6.17 Cashflow on Modernized Plant (150 t/day) plus Modernization of Existing Facilities at Barones  
(Case of standard Ag price)

(1000 US DOLLAR)

YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	15	17	TOTAL	
+ NET REVENUE		126	1,872	1,872	1,872	1,872	1,872	1,872	1,872	1,872	1,872	1,746	1,746	1,746	1,746	1,746	1,746	1,746	27,450
-) OPERATING COST		-49	970	970	970	970	970	970	970	970	970	1,019	1,019	1,019	1,019	1,019	1,019	1,019	14,795
-) DEPRECIATION		175	902	902	902	902	902	902	902	902	902	727	727	727	727	727	727	727	12,655
-) INTEREST 5%		161	321	296	267	237	206	173	140	106	70	34	2	0	0	0	0	0	2,013
-) PROFIT BEFORE TAX		0	34	59	88	118	149	182	215	249	285	158	626	628	628	628	628	628	4,685
-) INCOME TAX 35%		0	12	21	31	41	52	64	75	87	100	59	219	220	220	220	220	220	1,641
-) PROFIT AFTER TAX		0	22	38	57	77	97	118	140	162	185	109	407	408	408	408	408	408	3,044
-) INITIAL INVESTMENT	3,225	3,024	85																6,249
-) WORKING CAPITAL																			0
+ PRIMARY BANK LOANS	3,225	3,185	484	585	604	624	644	665	687	709	732	634	42	0	0	0	0	0	6,410
-) LOAN REPAYMENT		0	0	0	0	0	0	0	0	0	0	0	464	507	507	507	592	592	2,571
-) SURPLUS	3,225	6,410	5,926	5,341	4,737	4,113	3,469	2,804	2,117	1,408	676	42	0	0	0	0	0	0	0
-) DEBT OUTSTANDING																			0
BEFORE INTEREST	-3,225	-2,849	805	881	871	861	850	838	827	815	802	668	508	507	507	507	592	592	4,765
NET CASH FLOW	-3,042	-2,536	676	698	651	607	565	526	490	455	422	332	238	224	212	200	220	220	937
NET PRESENT VALUES	5%	-2,986	639	648	593	543	496	453	414	378	344	265	187	173	160	148	160	160	170
OF N.C.F. AT	10%	-2,932	605	602	541	485	436	391	351	314	281	213	147	134	121	110	117	117	-437
DISCOUNT RATES:	12%	-2,879	573	560	494	436	384	338	298	262	231	171	116	104	93	83	86	86	-920
	14%	-2,829	543	522	452	392	340	294	254	220	190	139	92	81	71	62	64	64	-1,305
	16%	-2,780	516	487	415	353	301	256	217	185	157	113	74	63	55	47	47	47	-1,613
INTERNAL RATE OF RETURN:																			8.5 %

Table 8.6.18 Cashflow on Modernized Plant (150 t/day) plus Modernization of Existing Facilities at Barones

(Case of 10% up Ag price)

BARONES 150T/D MODERNIZED PLANT PLUS MODERNIZATION OF THE EXISTING FACILITIES AG-630  
(1000 US DOLLAR)

YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	TOTAL
+ NET REVENUE		132	1,970	1,970	1,970	1,970	1,970	1,970	1,970	1,970	1,970	1,838	1,838	1,838	1,838	1,838	1,838	28,890
- OPERATING COST		-48	970	970	970	970	970	970	970	970	970	1,019	1,019	1,019	1,019	1,019	1,019	14,795
- DEPRECIATION		181	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	819	819	819	819	819	819	14,095
- INTEREST 5%		22	547	547	547	547	547	547	547	547	547	525	525	525	525	525	525	5,955
- PROFIT BEFORE TAX		161	321	293	261	227	192	156	119	81	42	1	0	0	0	0	0	1,854
- INCOME TAX 35%		0	132	160	192	226	261	297	334	372	411	293	270	252	252	252	252	2,197
- PROFIT AFTER TAX		161	189	133	69	1	31	57	104	130	144	103	103	103	103	103	103	2,197
- INITIAL INVESTMENT	3,225	3,024	86	104	125	147	170	193	217	242	267	190	468	468	468	468	468	4,081
- WORKING CAPITAL			85															6,249
+ PRIMARY BANK LOANS	3,225	3,185	548	651	672	694	717	740	764	789	814	21	0	0	0	0	0	6,410
- LOAN REPAYMENT		0	0	0	0	0	0	0	0	0	0	694	567	567	567	567	567	3,614
- SURPLUS	3,225	6,410	5,862	5,211	4,599	3,845	3,128	2,388	1,624	935	21	0	0	0	0	0	0	0
- DEBT OUTSTANDING																		0
BEFORE INTEREST																		0
NET CASH FLOW	-3,225	-2,843	869	944	933	921	909	896	883	870	856	716	567	567	567	567	567	5,649
NET PRESENT VALUES OF N.C.F. AT DISCOUNT RATES:																		
6%	-3,042	-2,530	730	748	697	649	605	562	523	486	451	356	266	251	237	223	242	1,452
8%	-2,986	-2,437	690	694	635	580	530	484	442	403	367	284	208	193	179	166	176	608
10%	-2,932	-2,350	653	645	579	520	466	418	374	335	300	228	164	149	136	123	129	-60
12%	-2,879	-2,266	619	600	533	477	411	362	318	280	245	184	130	116	104	92	95	-593
14%	-2,829	-2,188	587	559	485	420	363	314	272	235	203	149	103	91	79	70	70	-1019
16%	-2,780	-2,113	557	521	444	378	322	273	232	197	167	121	82	71	61	53	52	-1,361
INTERNAL RATE OF RETURN:																		9.8%



Table 8.6.19 Cashflow on Modernized Plant (200 t/day) plus Modernization of Existing Facilities at Barones

(Case of standard Ag price)

(1000 US DOLLAR)

YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	TOTAL
+NET REVENUE		126	2,454	2,454	2,454	2,454	2,454	2,454	2,454	2,454	2,454	2,328	2,328	2,328	2,328	2,328	2,328	36,180
-)OPERATING COST		-49	1,273	1,273	1,273	1,273	1,273	1,273	1,273	1,273	1,273	1,322	1,322	1,322	1,322	1,322	1,322	19,340
OPERATING PROFIT		175	1,181	1,181	1,181	1,181	1,181	1,181	1,181	1,181	1,181	1,006	1,006	1,006	1,006	1,006	1,006	16,840
-)DEPRECIATION		22	599	599	599	599	599	599	599	599	599	577	577	577	577	577	109	6,535
-)INTEREST 5%		178	353	327	283	243	202	160	116	71	25	0	0	0	0	0	0	1,952
PROFIT BEFORE TAX		228	228	261	299	339	380	422	466	511	557	429	897	897	897	897	897	8,378
-)INCOME TAX 35%		0	80	91	105	119	133	148	163	179	195	150	314	314	314	314	314	2,933
PROFIT AFTER TAX		149	149	170	194	220	247	274	303	332	362	279	583	583	583	583	583	5,445
-)INITIAL INVESTMENT	3,557	3,326																6,883
-)WORKING CAPITAL			110															0
+PRIMARY BANK LOANS	3,557	3,504	638	789	793	819	846	873	902	931	490	0	0	0	0	0	0	7,061
-)LOAN REPAYMENT			0	0	0	0	0	0	0	0	471	856	692	692	692	692	802	4,857
SURPLUS			6,423	5,654	4,861	4,042	3,196	2,323	1,421	490	0	0	0	0	0	0	0	0
DEBT OUTSTANDING			7,061															0
BEFORE INTEREST																		
NET CASH FLOW	-3,557	-3,151	991	1,090	1,076	1,082	1,048	1,033	1,018	1,002	986	856	592	592	592	592	592	7,024
NET PRESENT VALUES OF N.C.F. AT DISCOUNT RATES:																		
6%	-3,356	-2,804	832	863	804	749	697	648	603	560	519	425	324	306	289	272	298	2,030
8%	-3,294	-2,701	787	801	732	669	611	558	509	464	423	340	254	236	218	202	217	1,027
10%	-3,234	-2,604	745	744	668	599	538	482	432	386	346	273	200	182	166	151	159	233
12%	-3,176	-2,512	705	693	611	538	474	417	367	323	283	220	159	142	126	113	117	-401
14%	-3,120	-2,425	669	645	559	484	419	362	313	270	233	178	126	111	97	85	86	-908
16%	-3,066	-2,342	635	602	512	436	371	315	258	227	193	144	100	87	75	64	64	-1,315
INTERNAL RATE OF RETURN:																		10.7 %

Table 8.6.20 Cashflow on Modernized Plant (200 t/day) plus Modernization of Existing Facilities at Barones

(Case of 10% down Ag price)

BARONES 200T/D MODERNIZED PLANT PLUS MODERNIZATION OF THE EXISTING FACILITIES AG=510																		
(1000 US DOLLAR)																		
YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	TOTAL
+NET REVENUE	120	2,329	2,329	2,329	2,329	2,329	2,329	2,329	2,329	2,329	2,329	2,209	2,209	2,209	2,209	2,209	2,209	84,335
-)OPERATING COST	-49	1,273	1,273	1,273	1,273	1,273	1,273	1,273	1,273	1,273	1,273	1,322	1,322	1,322	1,322	1,322	1,322	19,340
OPERATING PROFIT	169	1,056	1,056	1,056	1,056	1,056	1,056	1,056	1,056	1,056	1,056	887	887	887	887	887	887	14,995
-)DEPRECIATION	22	599	599	599	599	599	599	599	599	599	599	577	577	577	577	577	577	6,535
-)INTEREST 5%	178	353	353	325	291	256	219	181	143	102	61	18	0	0	0	0	0	2,127
PROFIT BEFORE TAX	104	104	104	132	166	201	238	276	314	355	396	292	278	278	278	278	278	6,364
-)INCOME TAX 35%	0	36	36	46	58	70	83	97	110	124	139	102	272	272	272	272	272	2,225
PROFIT AFTER TAX	68	68	68	86	108	131	155	179	204	231	257	190	506	506	506	506	506	4,139
-)INITIAL INVESTMENT	3,557	3,326																6,883
-)WORKING CAPITAL		110																7,061
+PRIMARY BANK LOANS	3,557	3,504																7,061
-)LDAN REPAYMENT																		0
SURPLUS	3,557	7,061	6,504	5,819	5,112	4,382	3,628	2,850	2,047	1,217	361	0	0	0	0	0	0	3,591
DEBT OUTSTANDING																		0
BEFORE INTEREST																		0
NET CASH FLOW	-3,557	-3,157	910	1,010	998	986	973	959	946	932	917	795	615	615	615	615	615	5,887
NET PRESENT VALUES	6%	-3,356	-2,810	764	800	746	695	647	602	560	520	390	288	272	257	242	229	1,370
OF N. C. F. AT	8%	-3,294	-2,707	722	742	679	621	568	518	473	432	312	226	209	194	180	196	466
DISCOUNT RATES:	10%	-3,234	-2,609	684	690	620	557	499	447	401	359	250	178	162	147	134	143	-250
	12%	-3,176	-2,517	648	642	566	500	440	387	341	300	201	141	126	112	100	106	-818
	14%	-3,120	-2,429	614	598	518	449	389	336	291	251	163	112	98	86	76	78	-1,272
	16%	-3,066	-2,346	583	558	475	344	293	249	211	179	132	89	77	66	57	58	-1,636
INTERNAL RATE OF RETURN:																		9.2 %

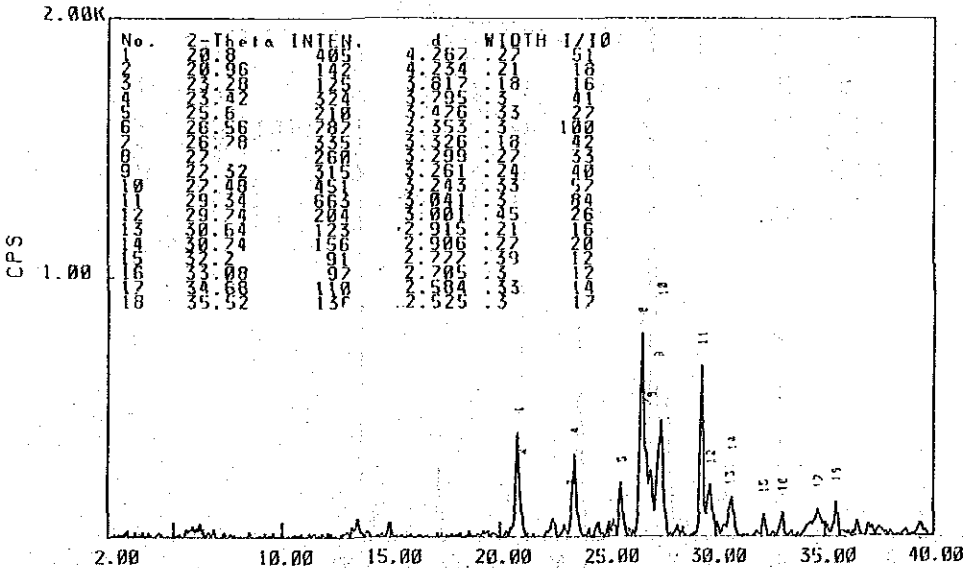
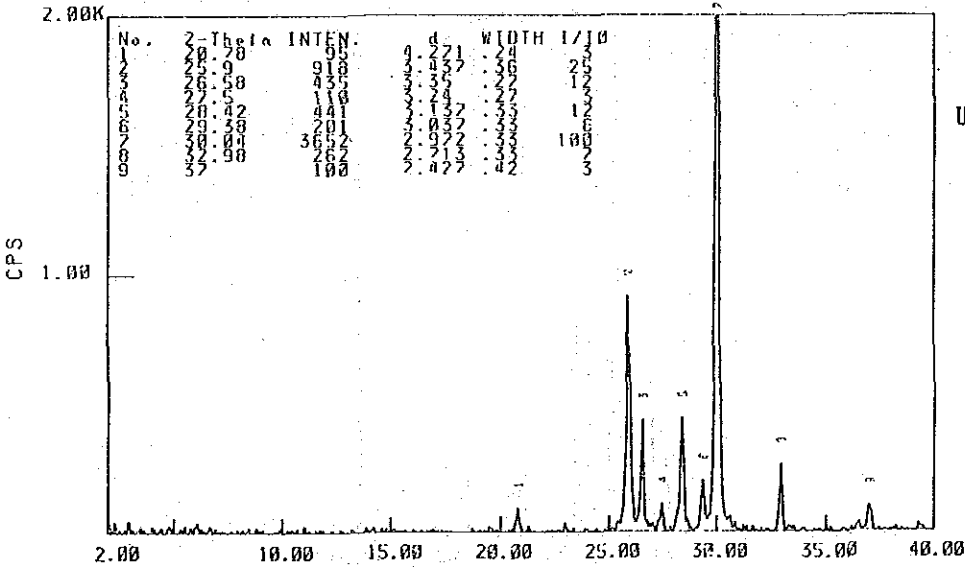
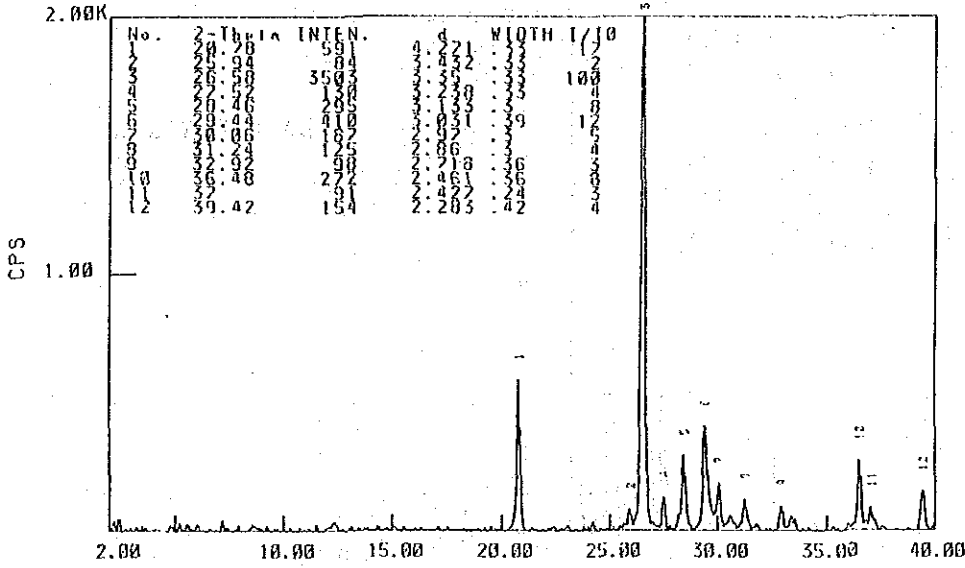
# Appendix-A

## X-ray diffraction patterns

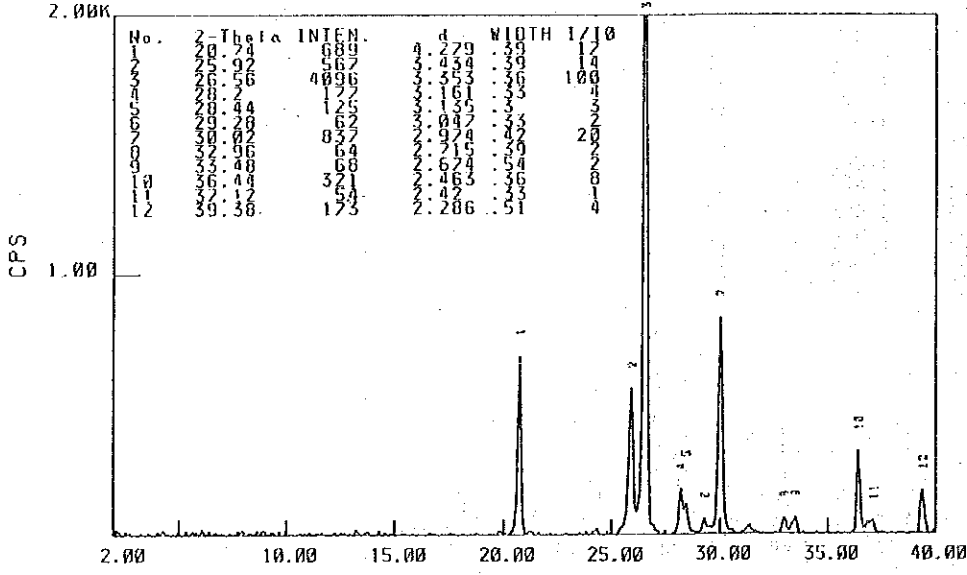
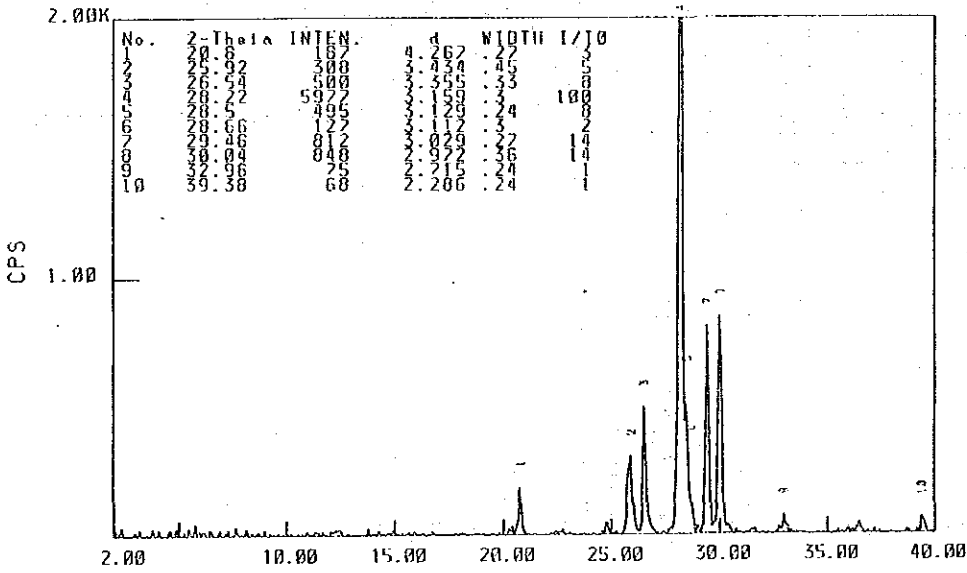
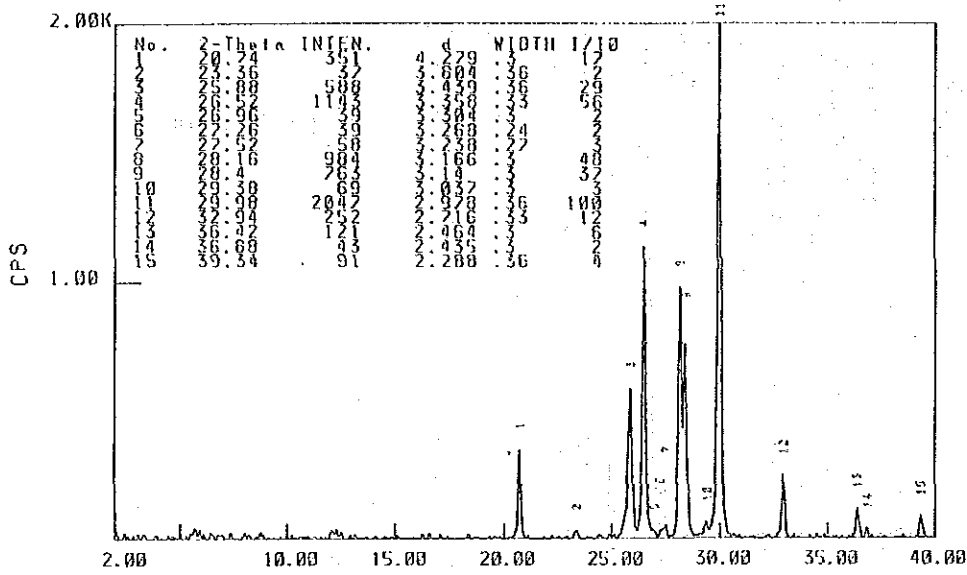
TARGET :Cu  
VOL and CUR: 30KV 15mA  
SLITS :DS 1 RS .15 SS 1  
SCAN SPEED: 10 DEG/MIN.  
STEP/SAMPL. : .02 DEG



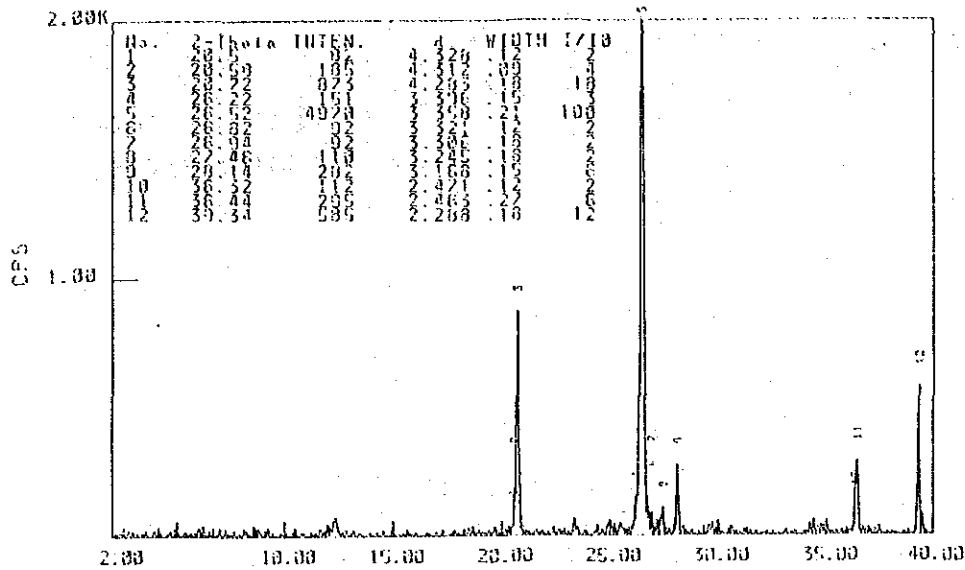
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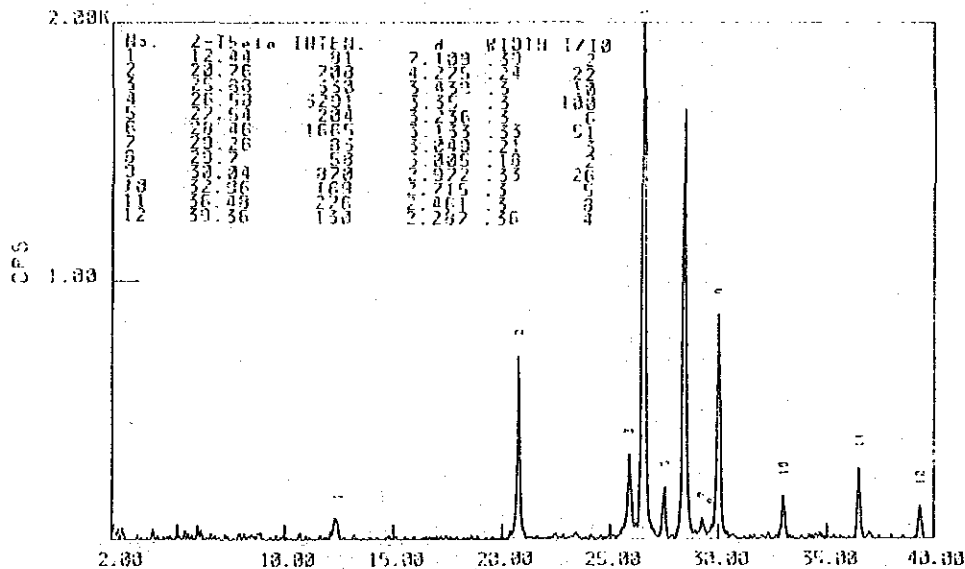
PARRAL



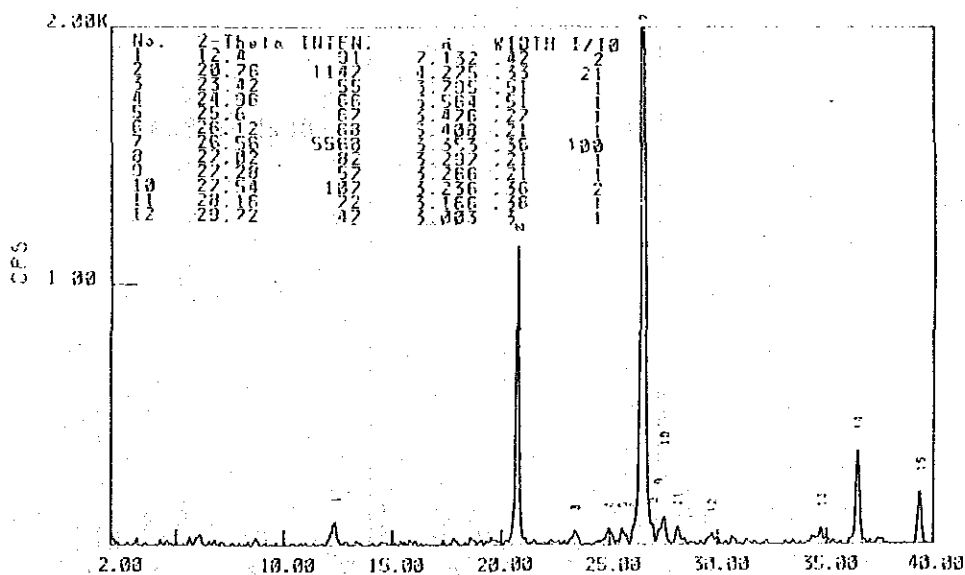
GUANACEVI



BARRADON



SAN JOSES CHICO



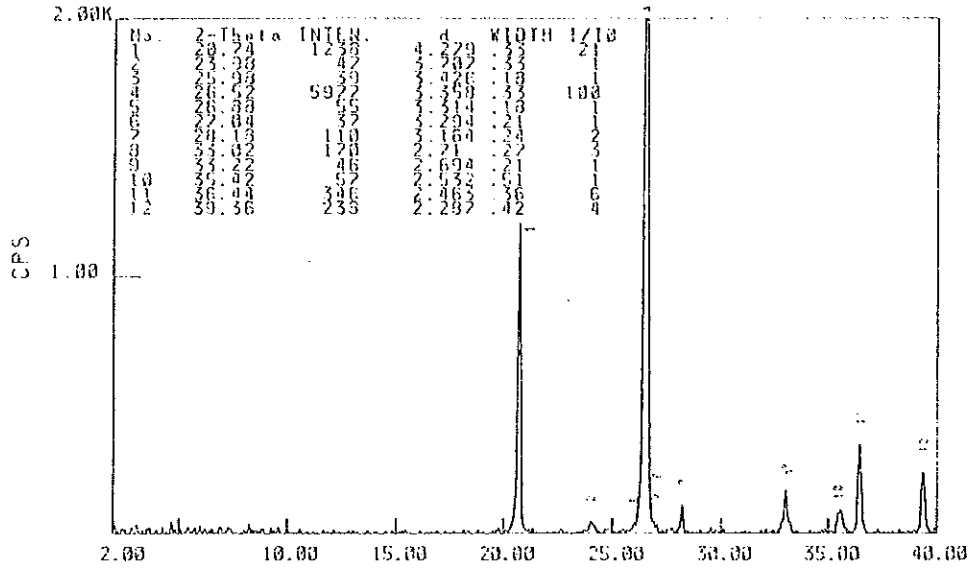
CAPUZAYA



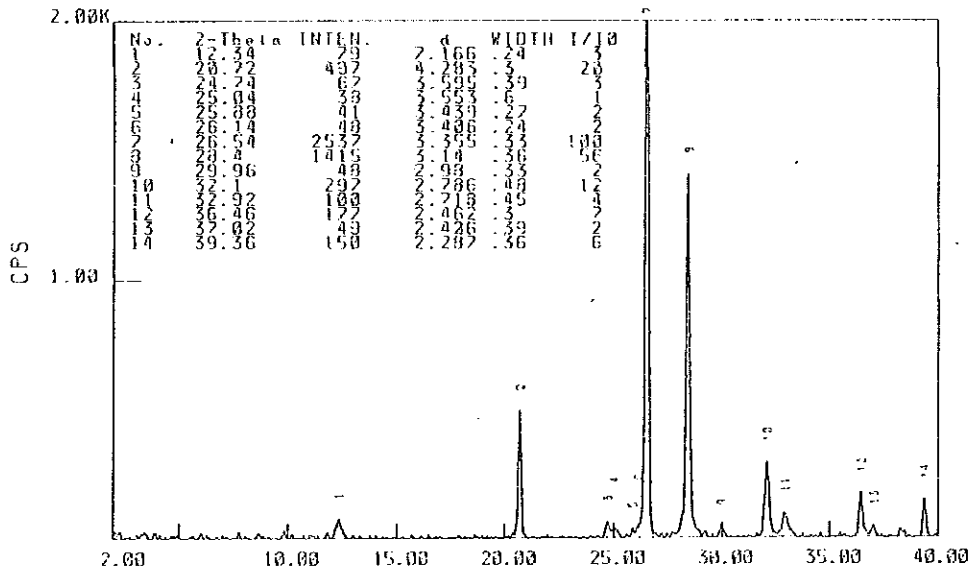




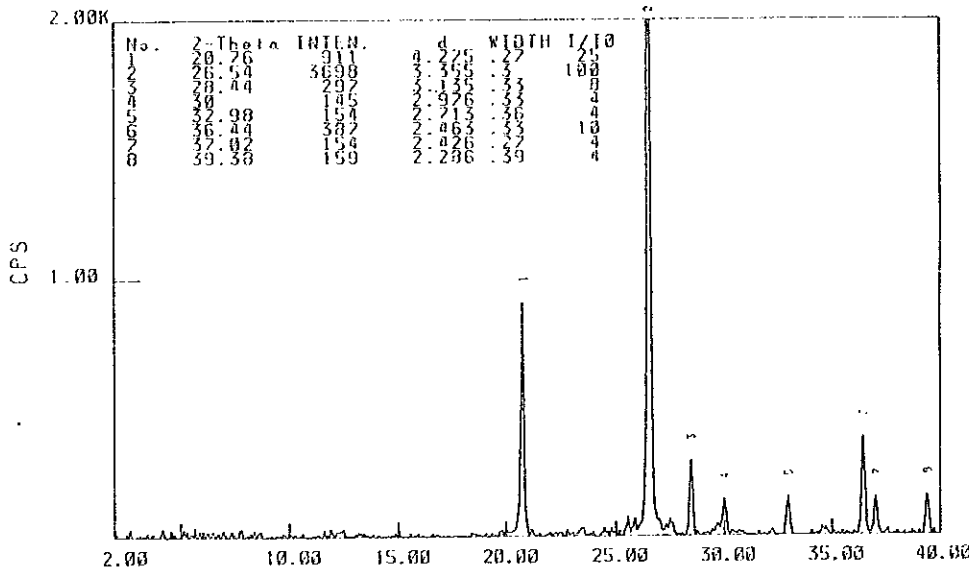
# BARONES



CALIFORNIA



SAN ROBERTO



SAN BERNABE

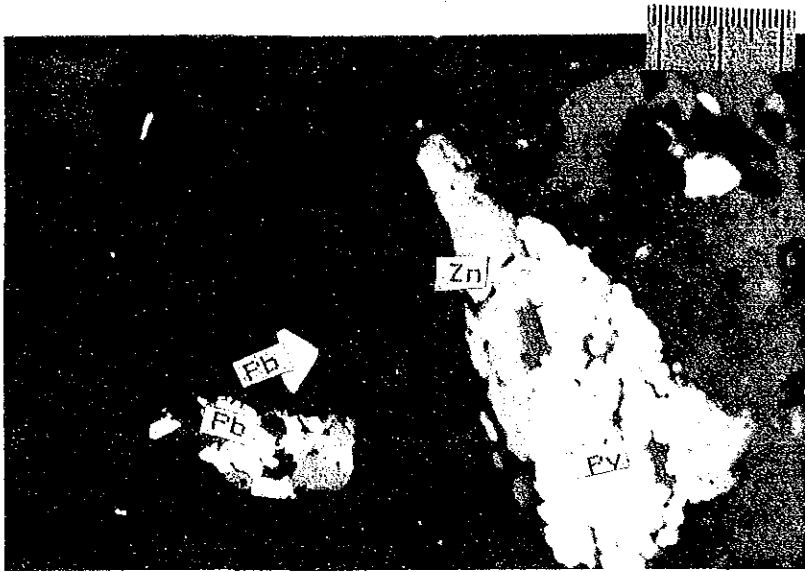
# Appendix-B

## Microscopic analysis

Cp:Chalcopyrite ( $\text{CuFeS}_2$ )  
Te:Tetrahedrite  $((\text{Cu, Ag})_{10}(\text{Fe, Zn})_2(\text{As, Sb})_4\text{S}_{13})$   
Ma:Marcasite ( $\text{FeS}_2$ )  
Pb:Galena ( $\text{PbS}$ )  
Zn:Sphalerite ( $\text{ZnS}$ )  
Py:Pyrite ( $\text{FeS}_2$ )  
G :Gangue

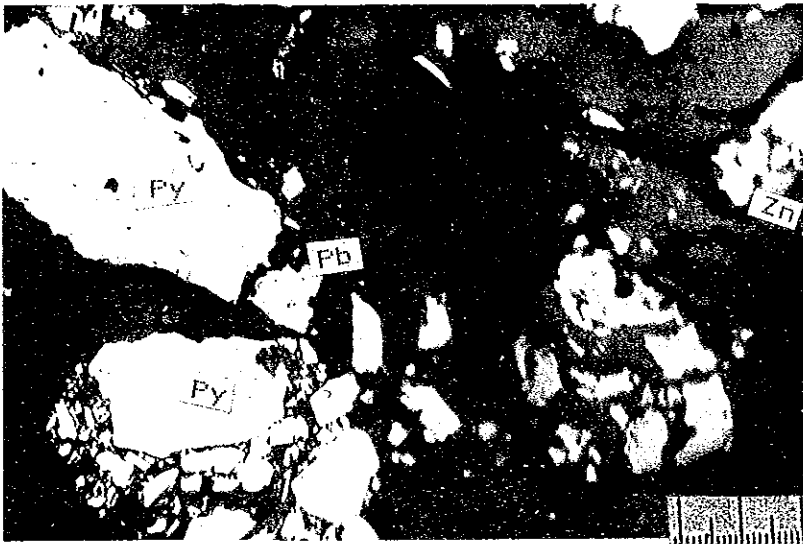


PARRAL



LA FORTUNA

100  $\mu$  m  
|-----|



UNFICACION  
CORDERO

100  $\mu$  m  
|-----|

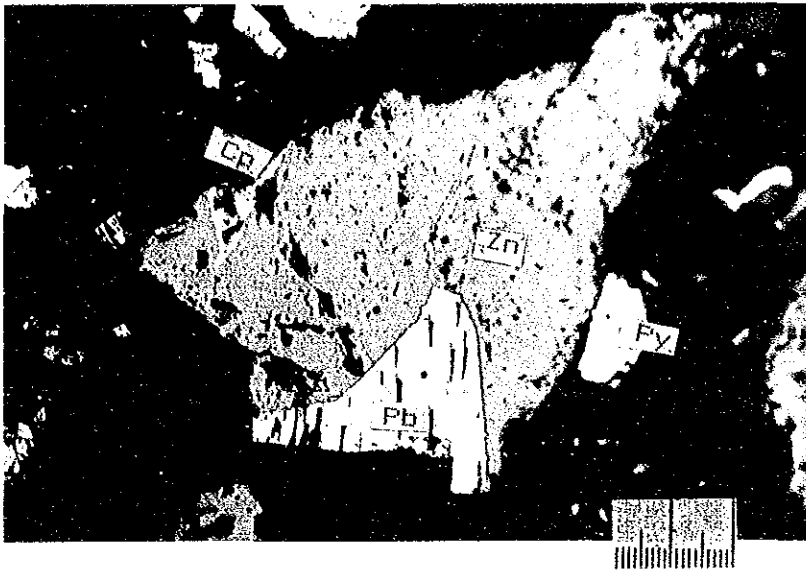


REVANCHA

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|-----|

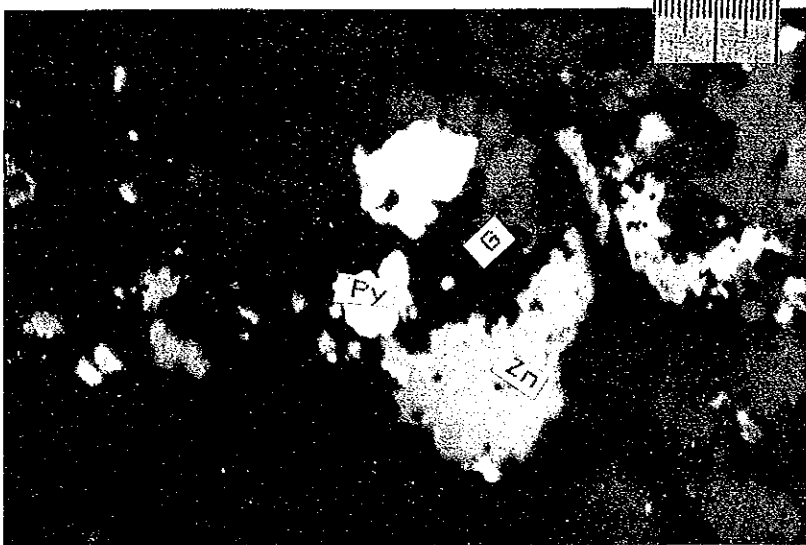


PARRAL



LA ESPERANZA

100  $\mu$  m  
|—|



LA PRESA

100  $\mu$  m  
|—|



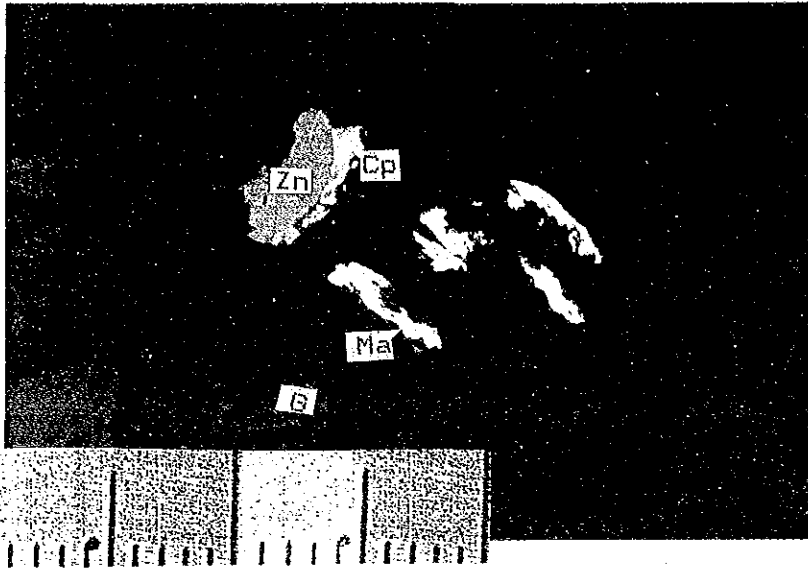
TILITA

100  $\mu$  m  
|—|



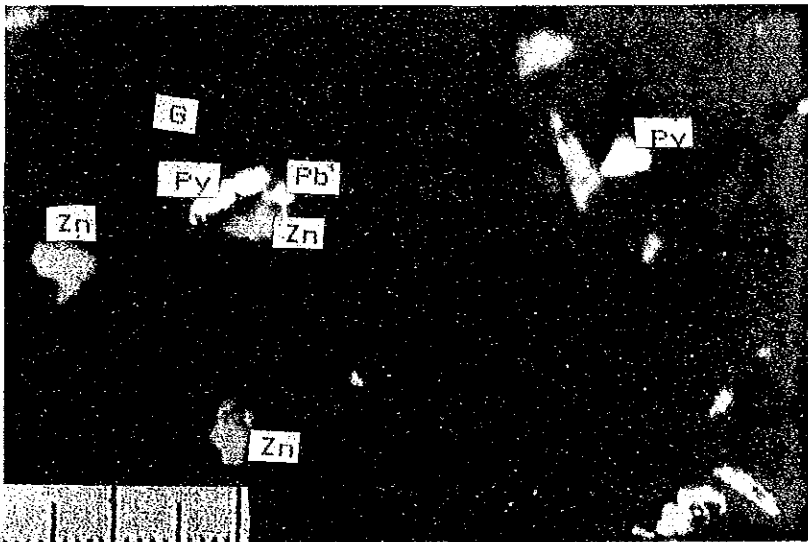


GUANACEVI



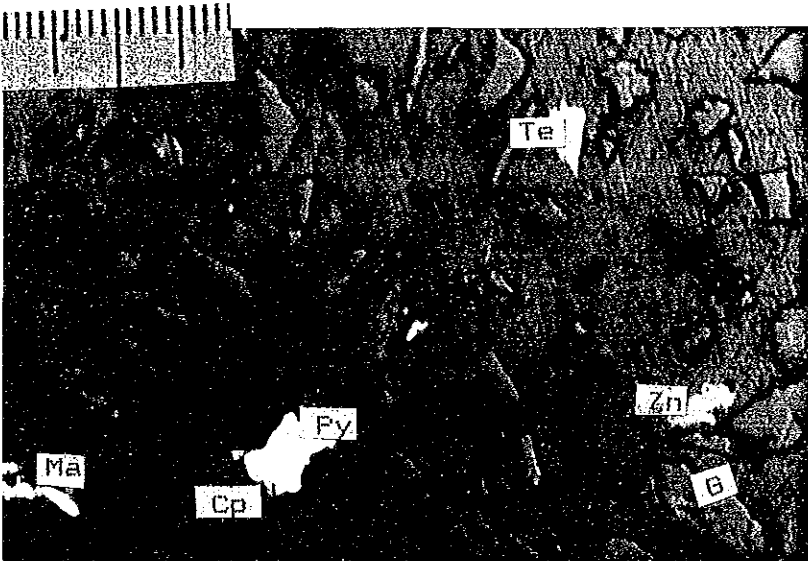
BARRADON

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SAN JOSES CHICO

100  $\mu$  m

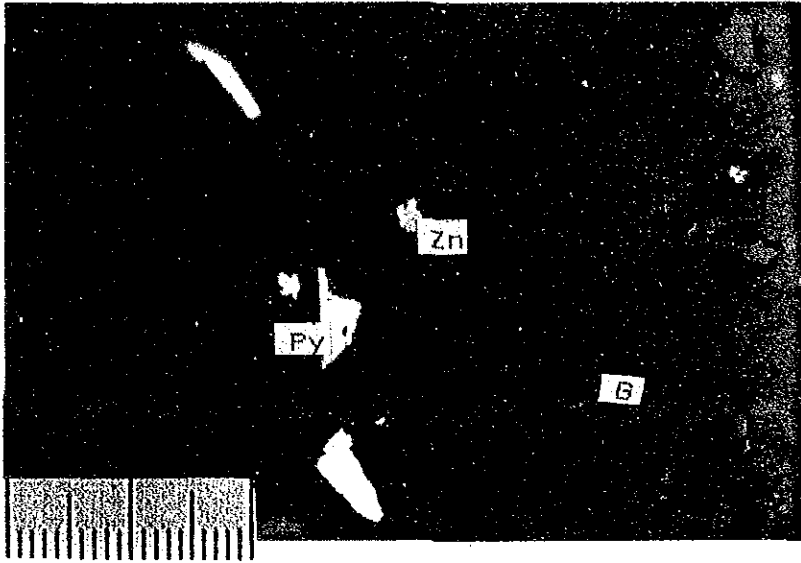


CAPUZAYA

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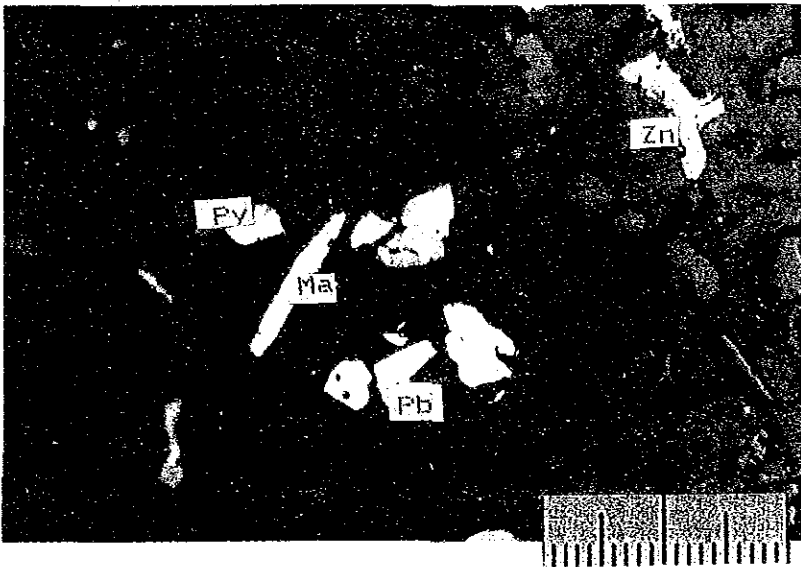


GUANACEVI



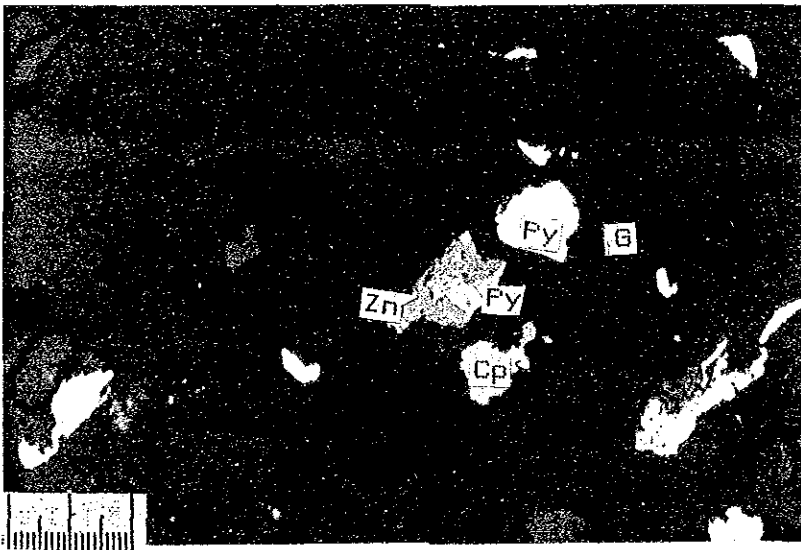
AMPEL DEL ALTO  
DEL NUEVO PORVEIR

100  $\mu$  m  
|-----|



SAN RAFAEL

100  $\mu$  m  
|-----|

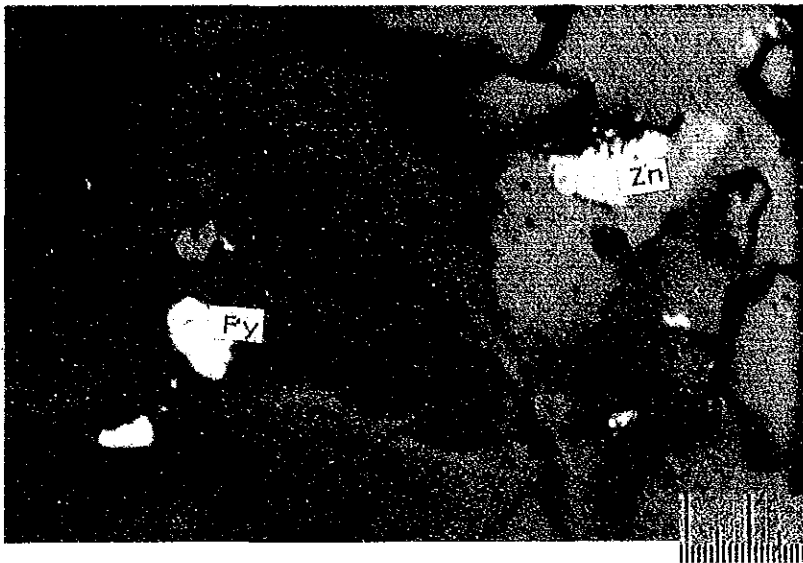


NOCHE BUENA

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|-----|

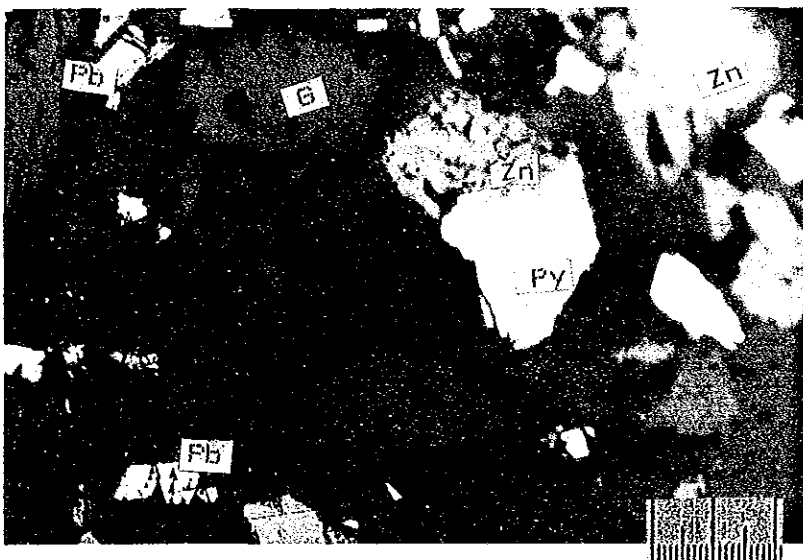


BARONES



AMPL SAN MIGUEL

100  $\mu$  m  
|—|



LAS CUMBRES

100  $\mu$  m  
|—|



CALICANTO

100  $\mu$  m  
|—|





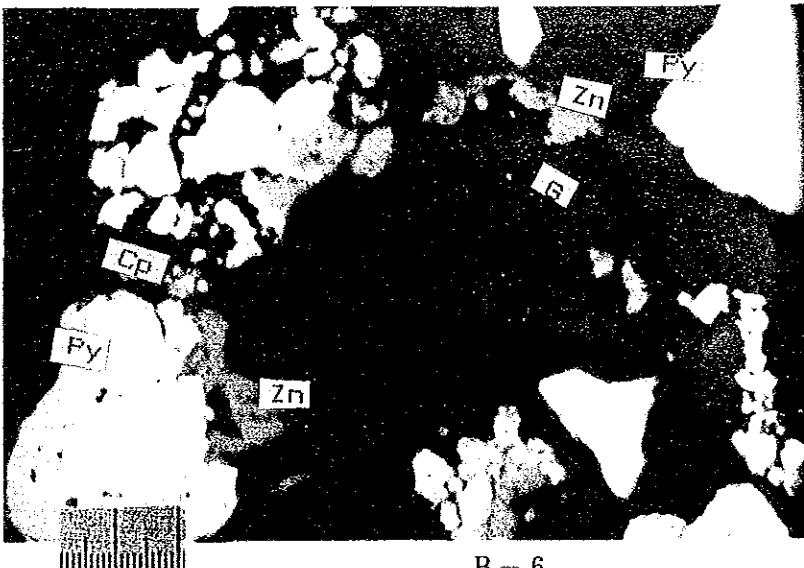
CALIFORNIA

100  $\mu$  m  
|



SAN ROBERTO

100  $\mu$  m  
|



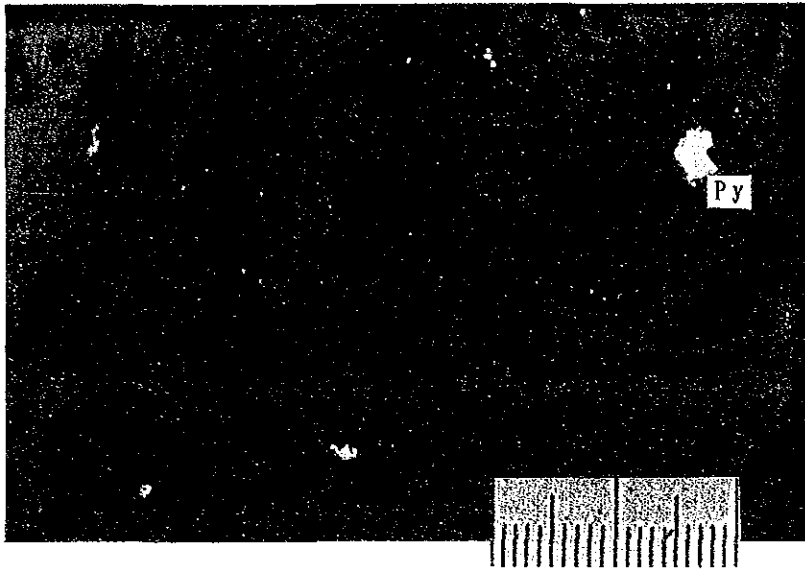
SAN BERNABE

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|





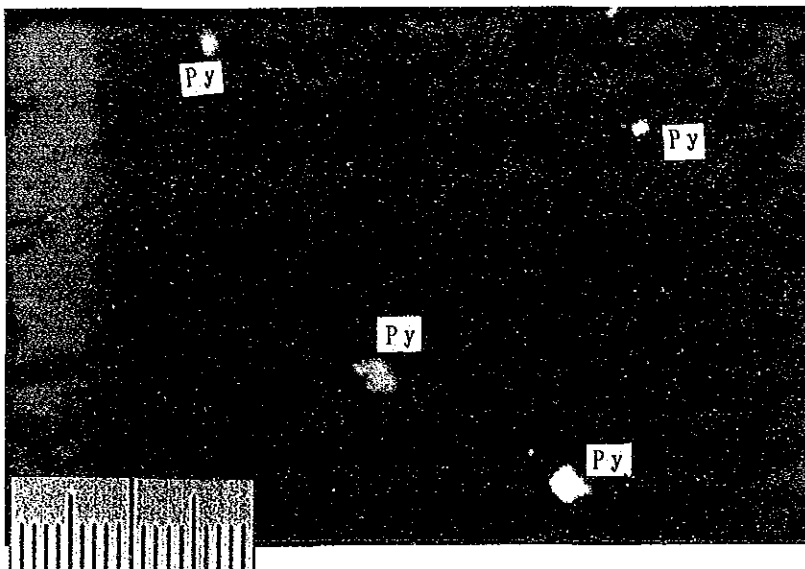
PARRAL



CASALE

flotation tailing

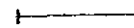
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CASALE

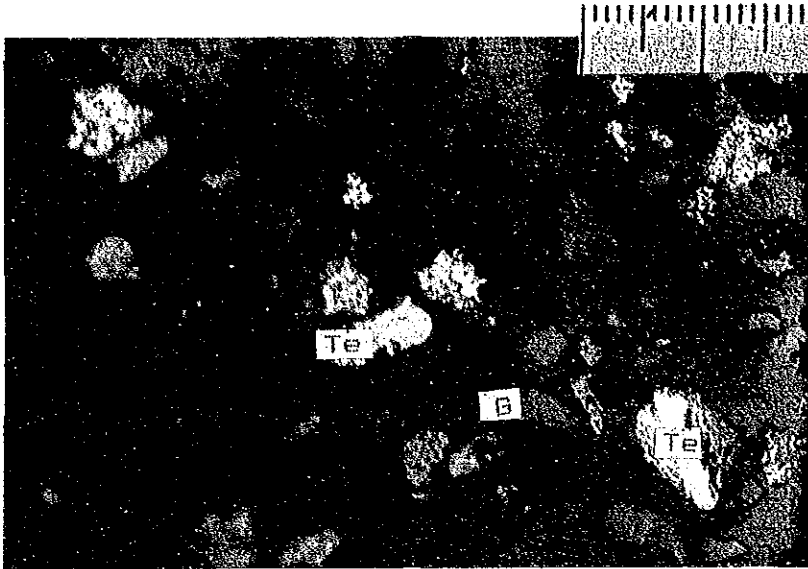
cyanidation  
tailing

100  $\mu$  m





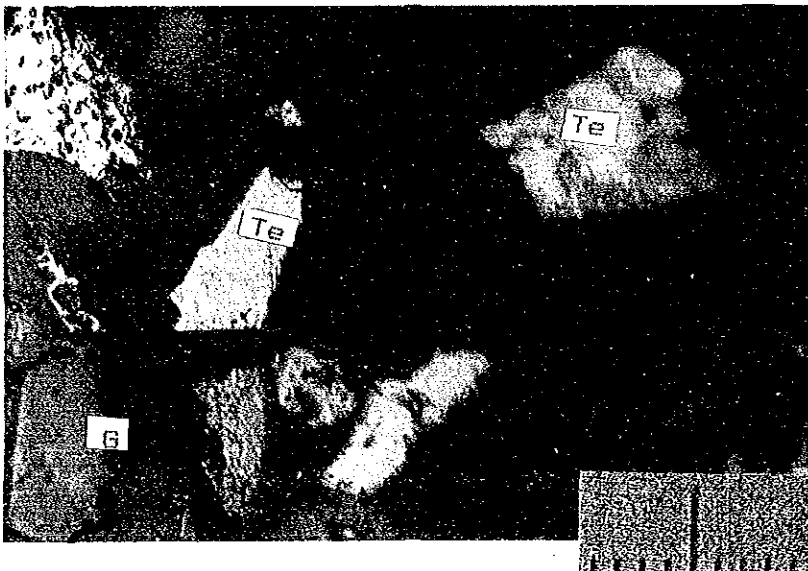
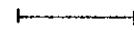
GUANACEVI



LA PRIETA

bacterial  
leaching feed

100  $\mu$  m



LA PRIETA

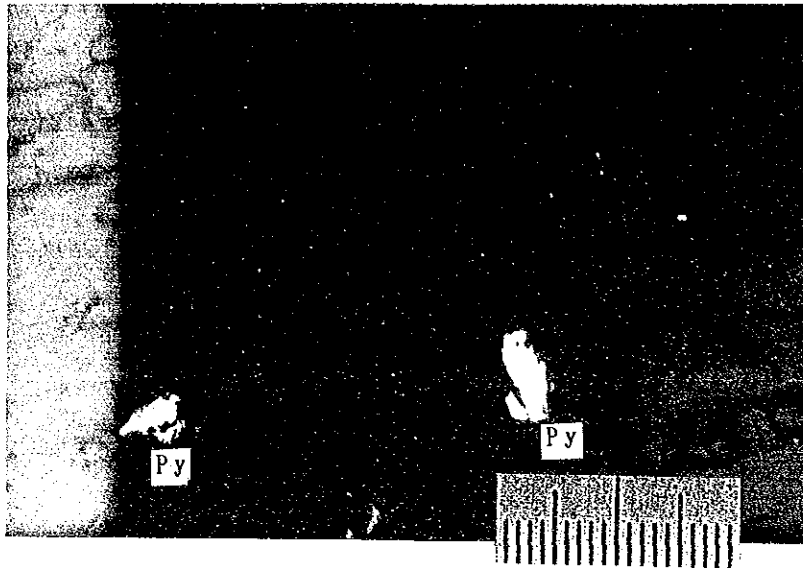
bacterial  
leaching feed

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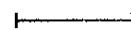
BARONES



SANTA MARTA

Zn flotation  
tailing

100  $\mu$  m





Appendix—C  
E P M A





L A F O R T U N A

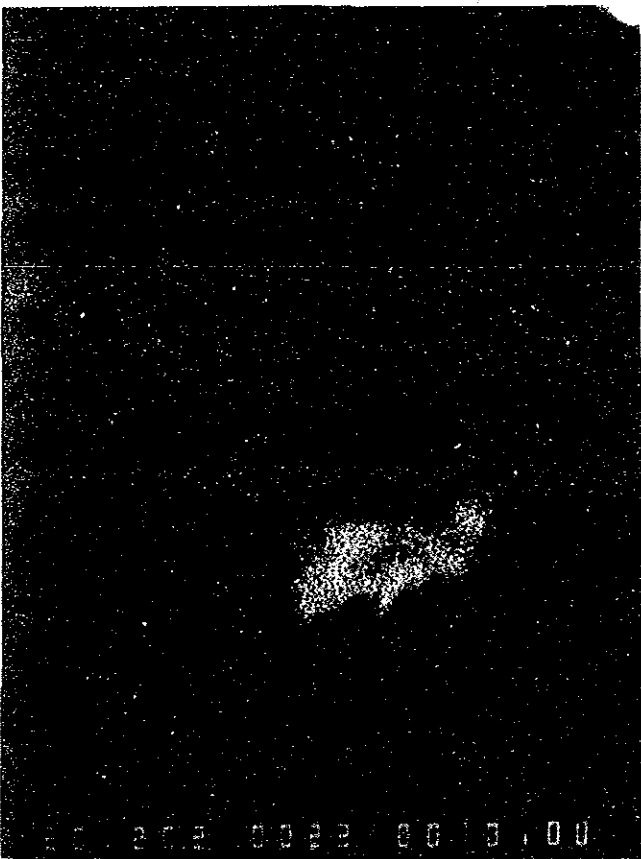


SE I

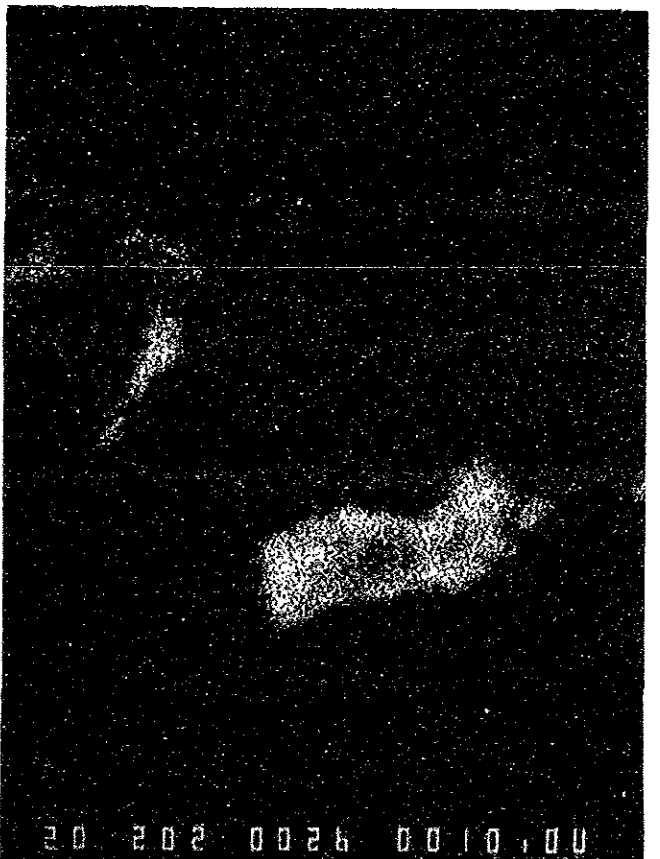
10  $\mu$



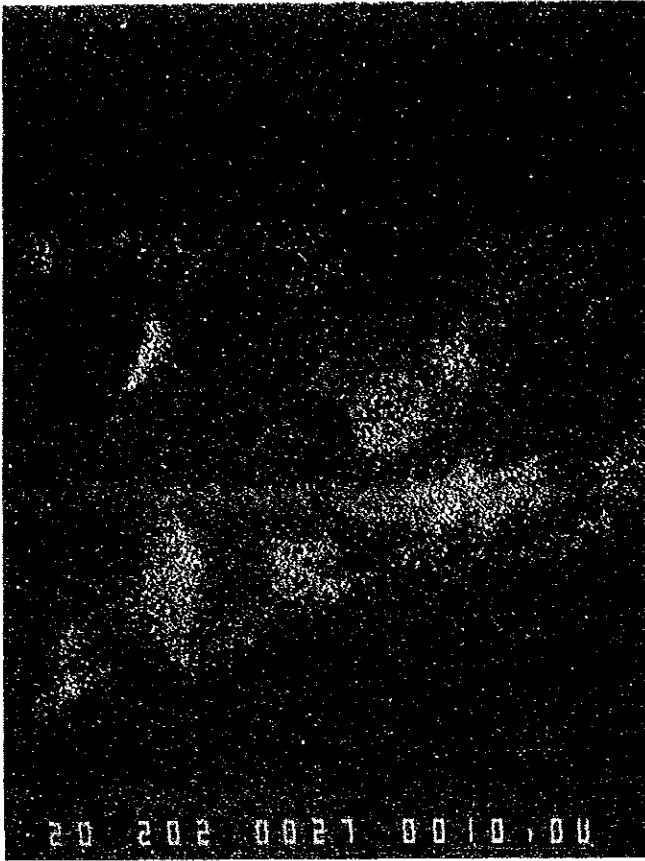
Compo



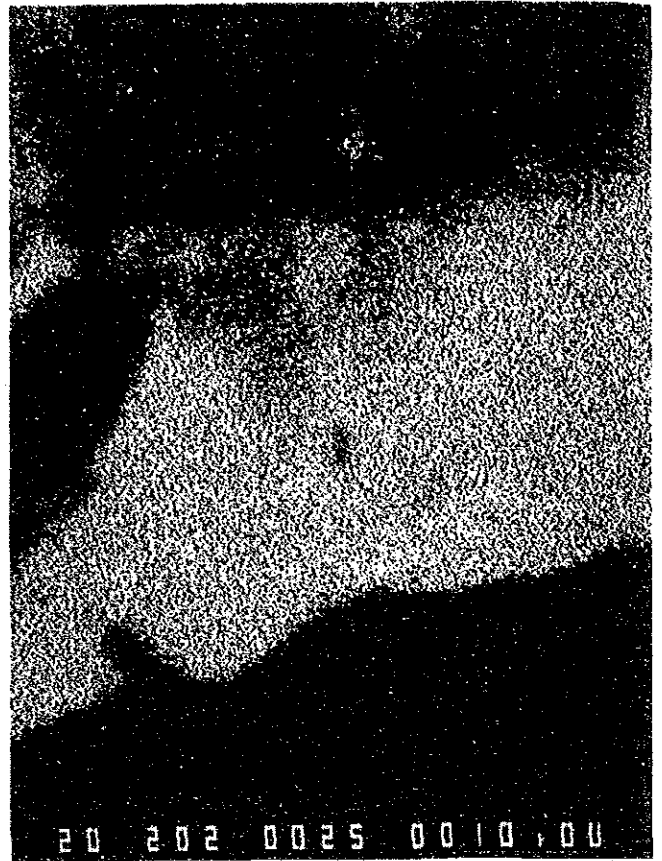
Ag



Cu



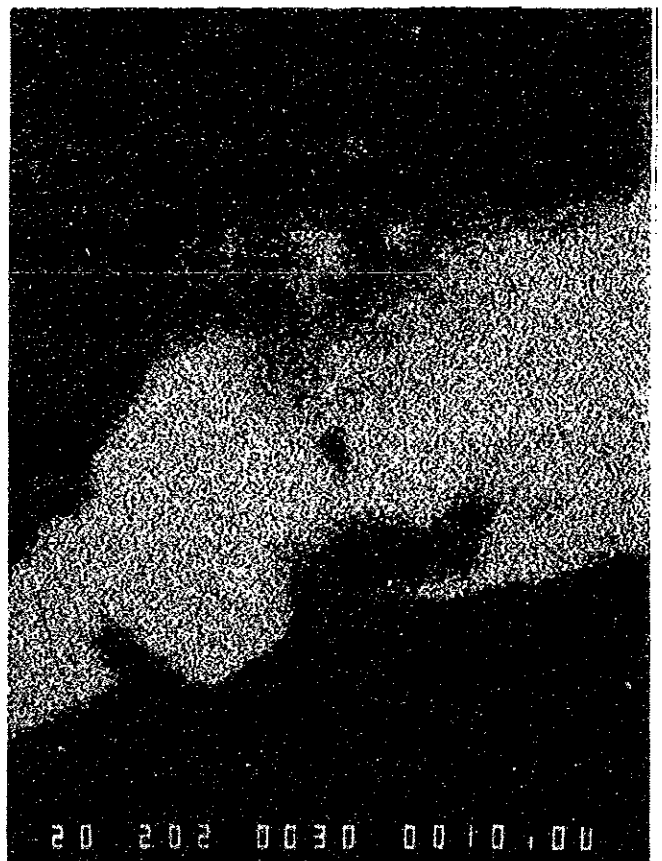
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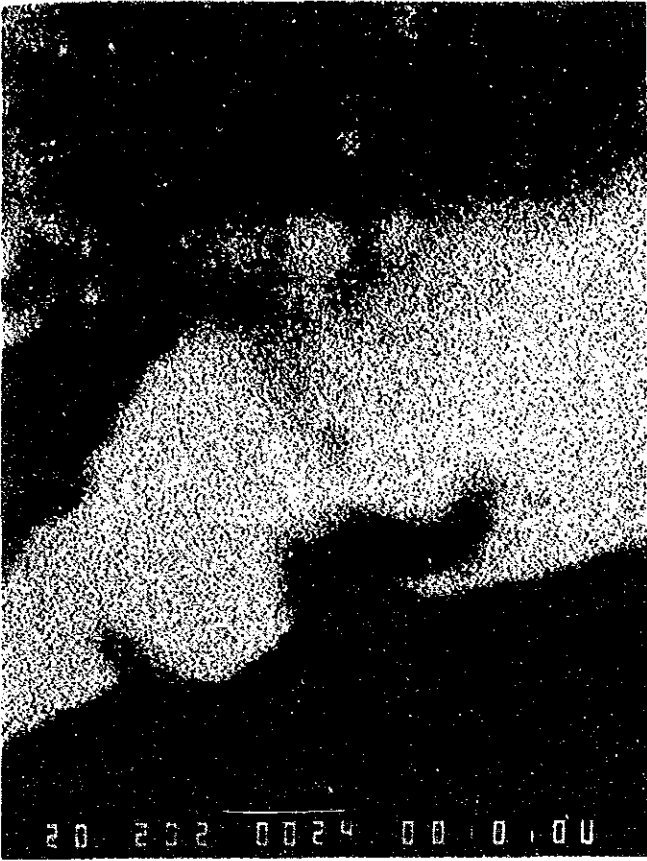
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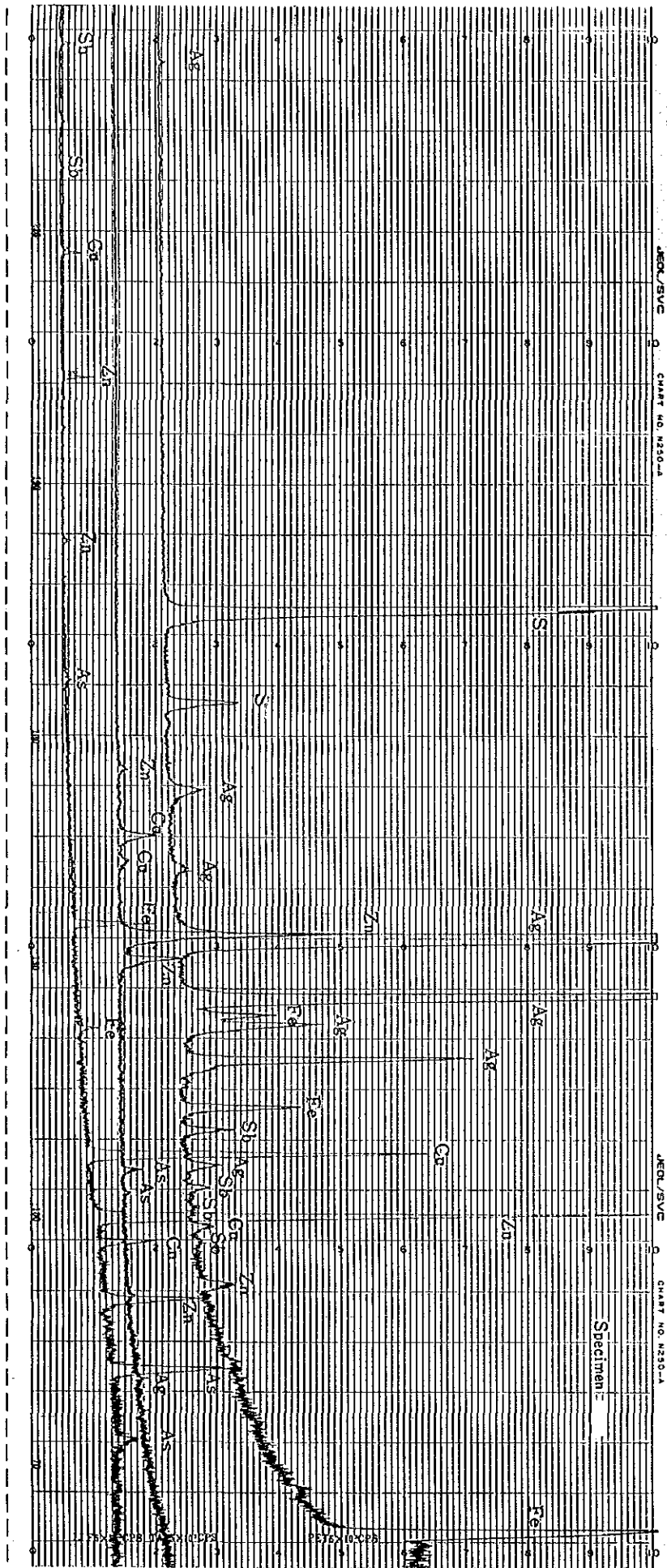
Zn



As



Fe



UNIFICACION CORDERO



SE I

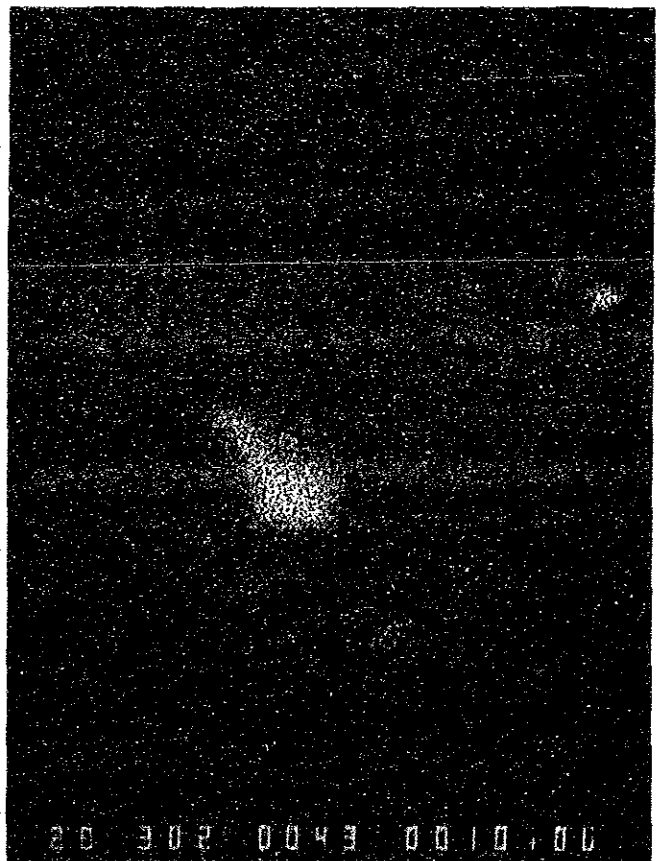
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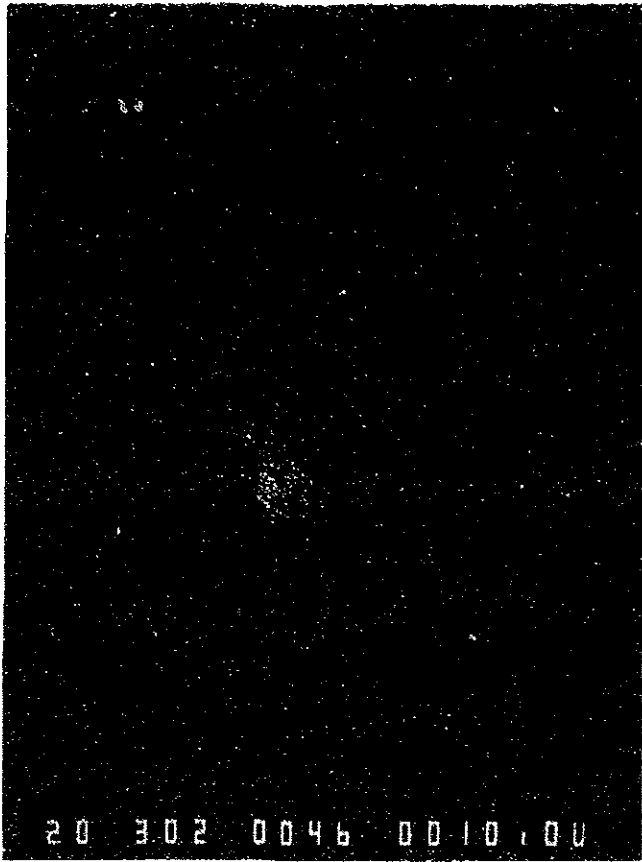
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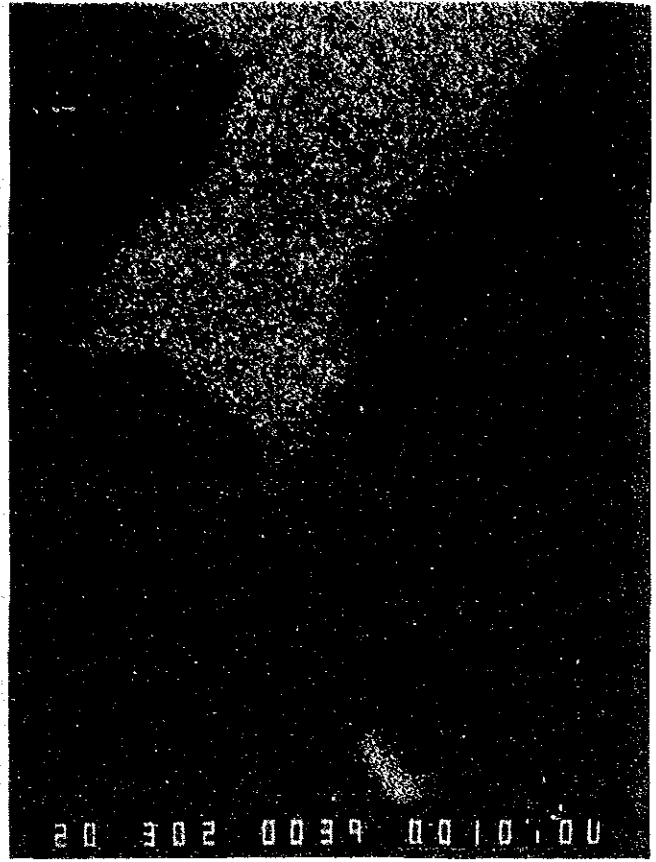
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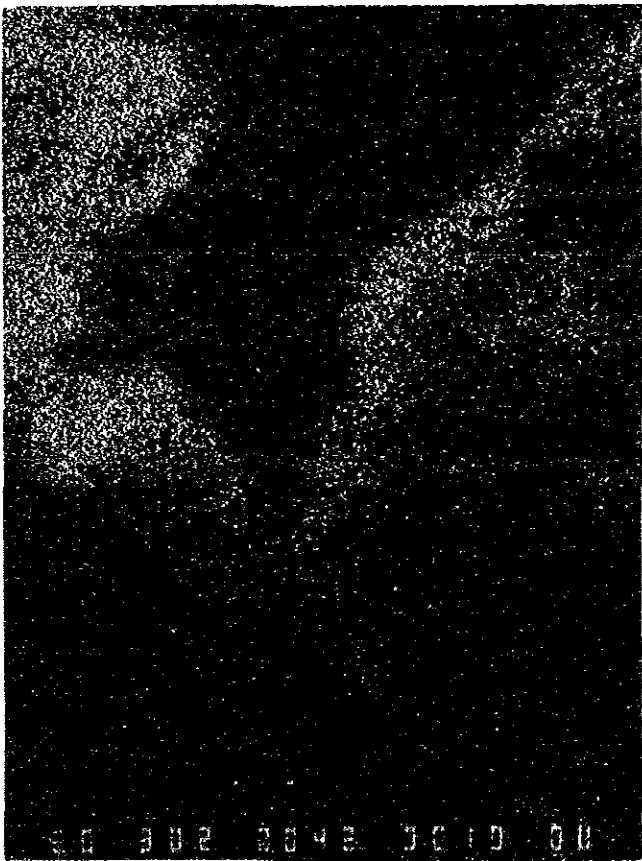
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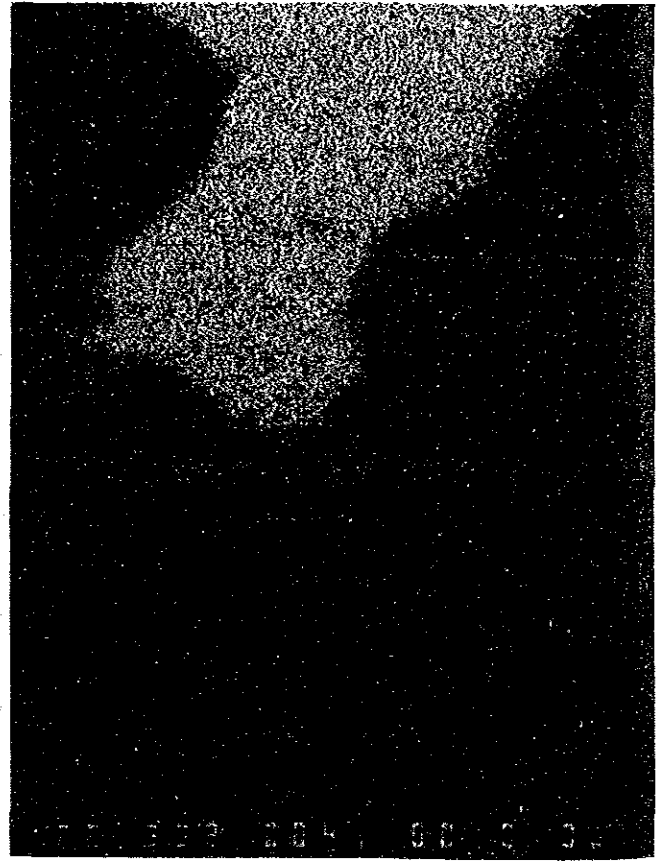
Sb



S



Mn



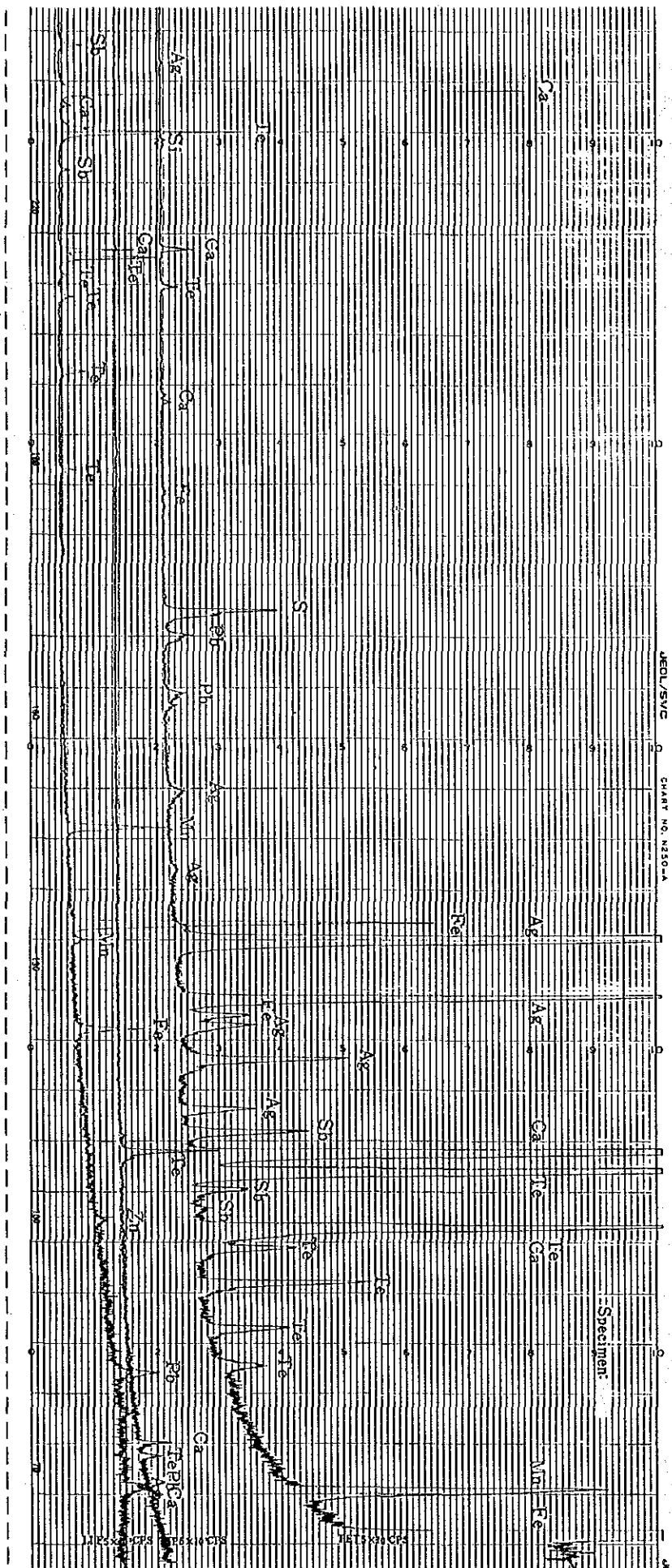
Pb



Ca



Fe

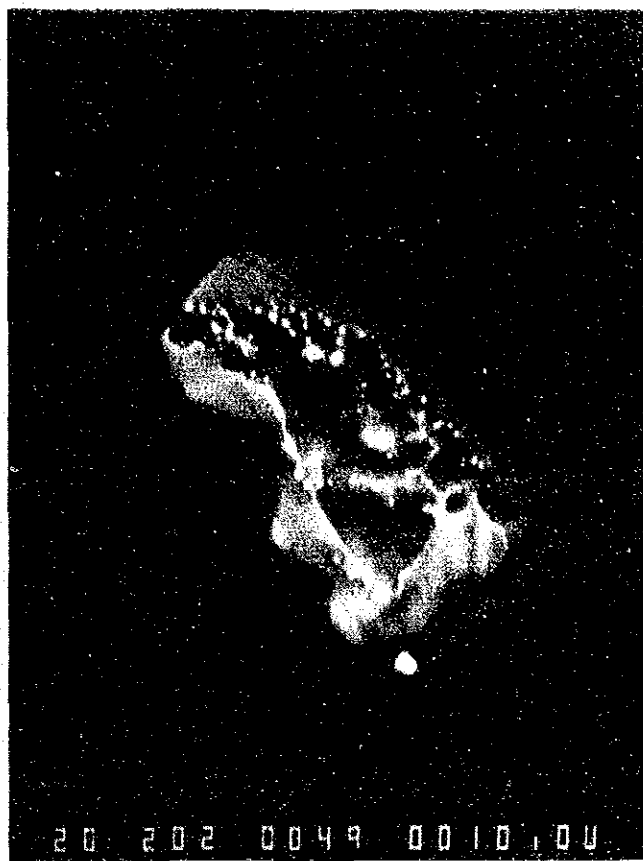






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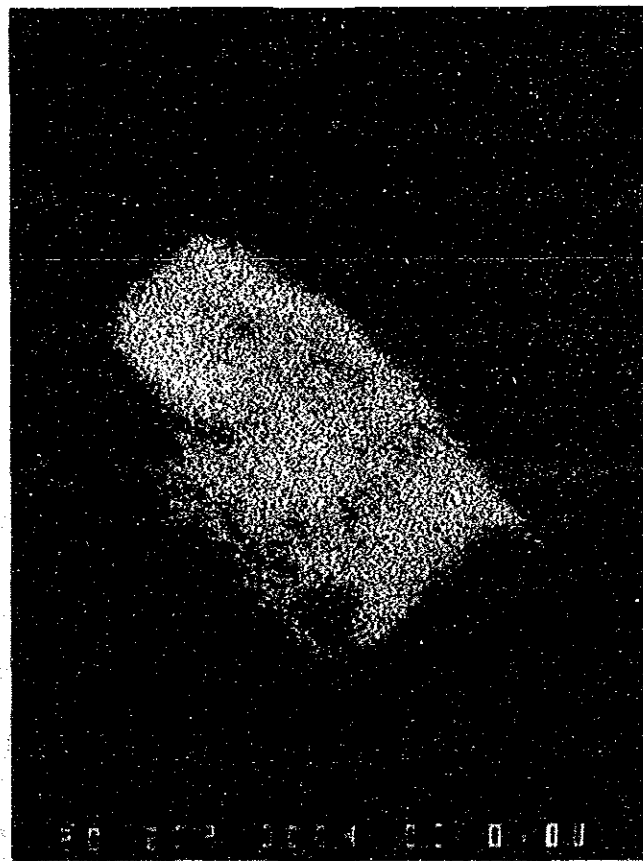
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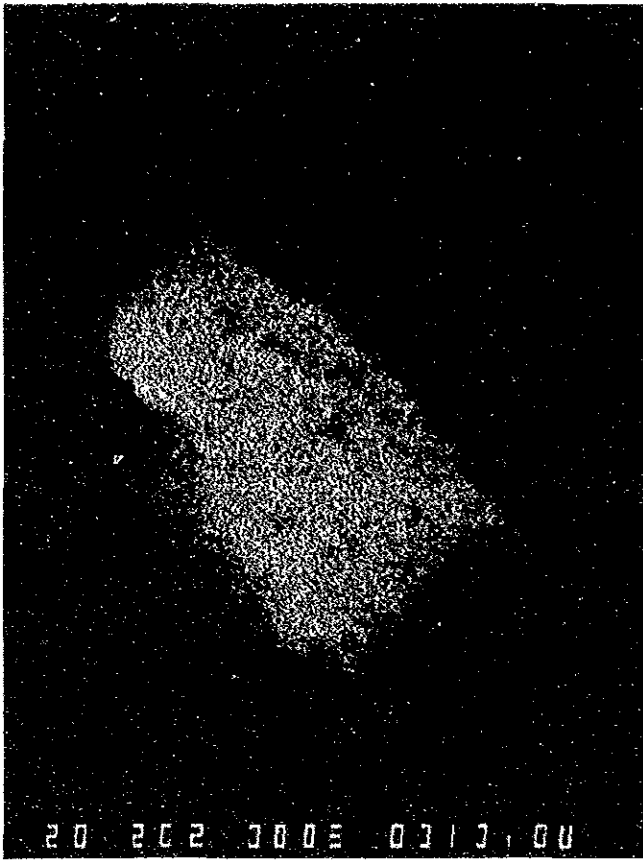
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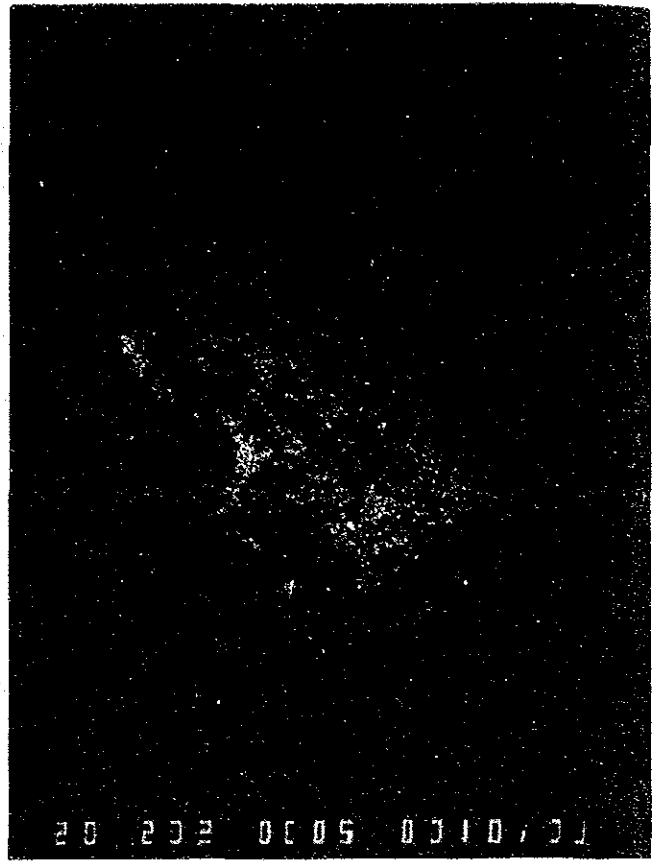
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Sb



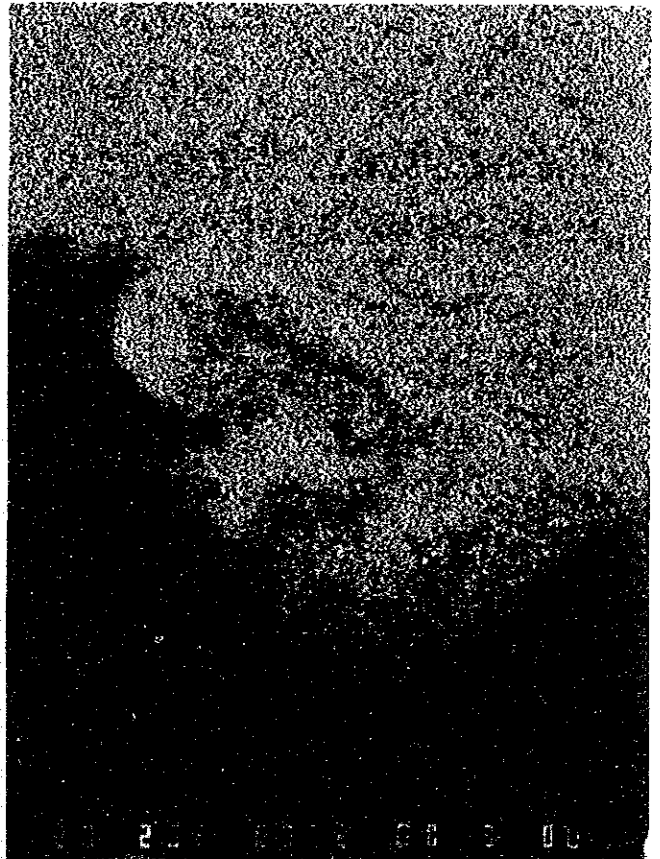
Cu



Zn



Fe



S



As



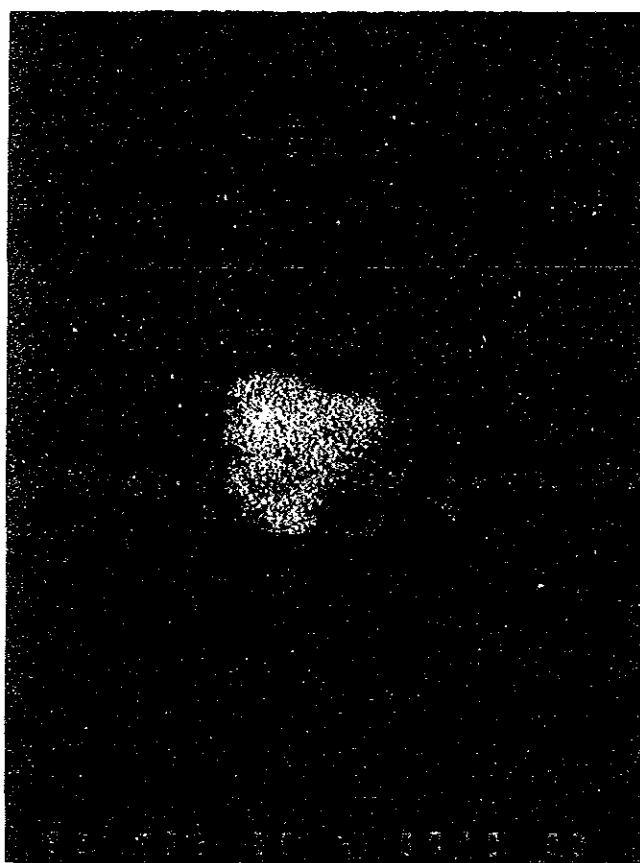


SE I

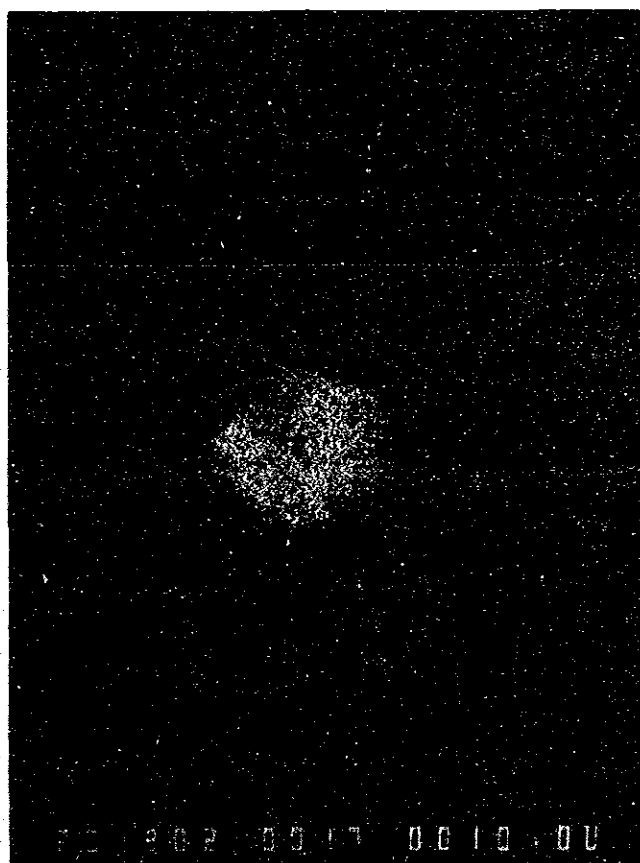
10  $\mu$



Compo



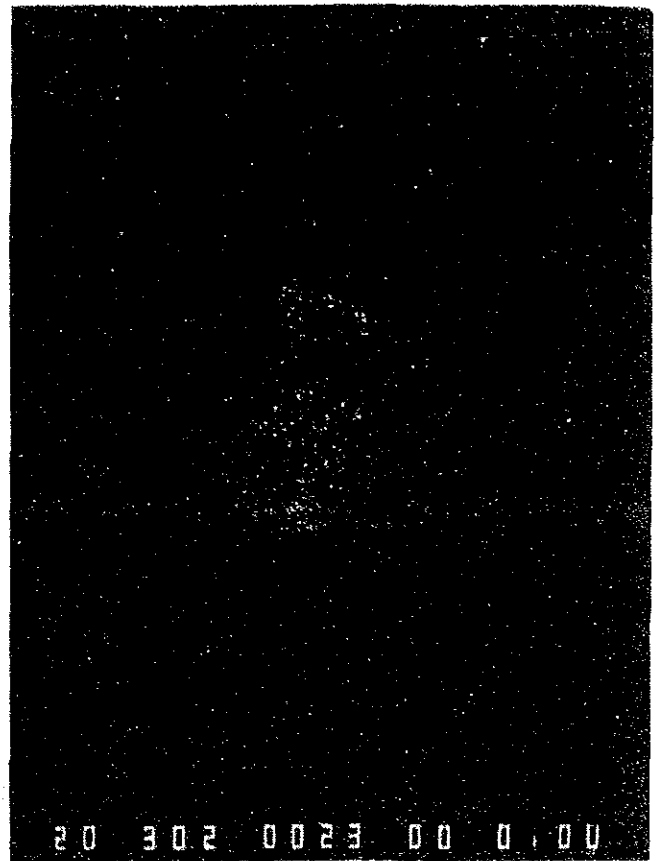
Ag



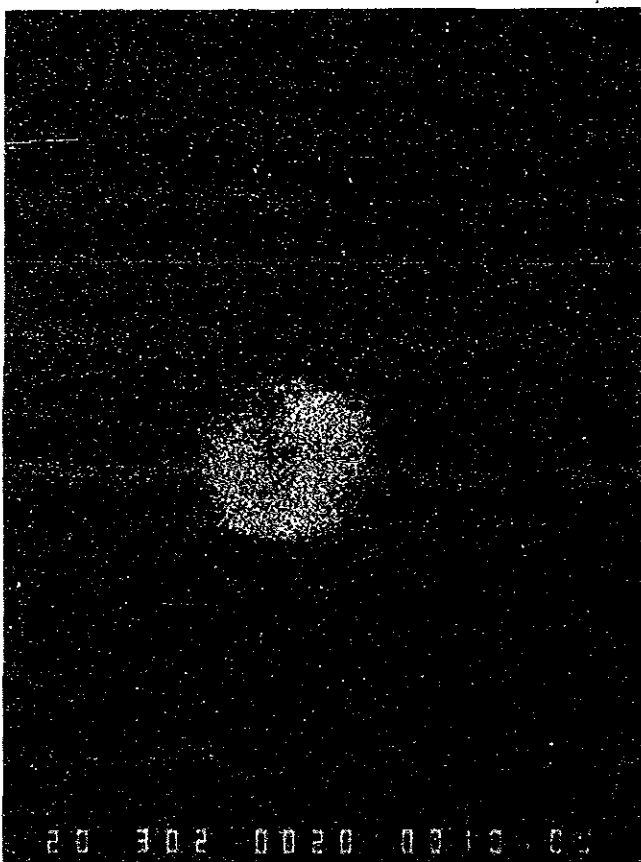
Cu



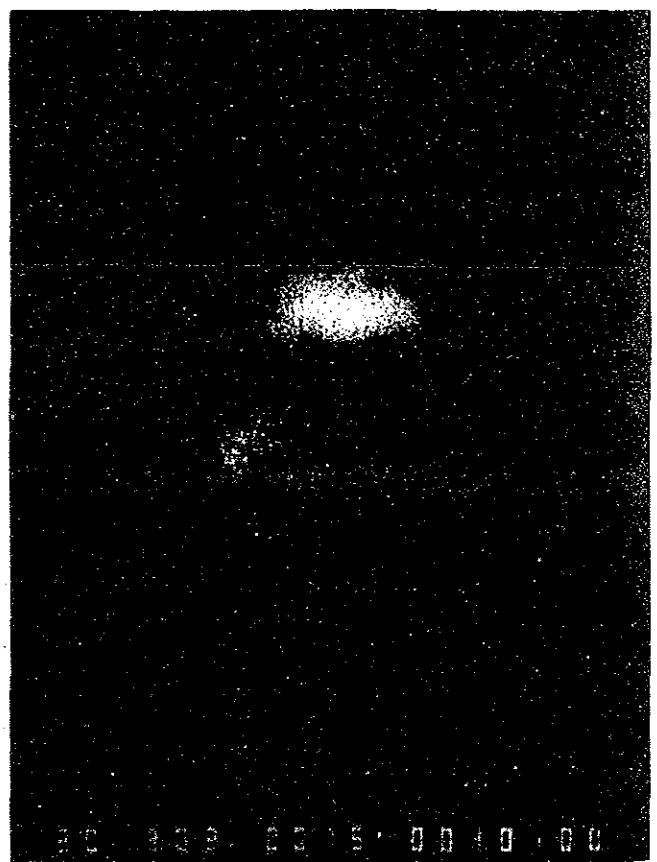
Ca



As



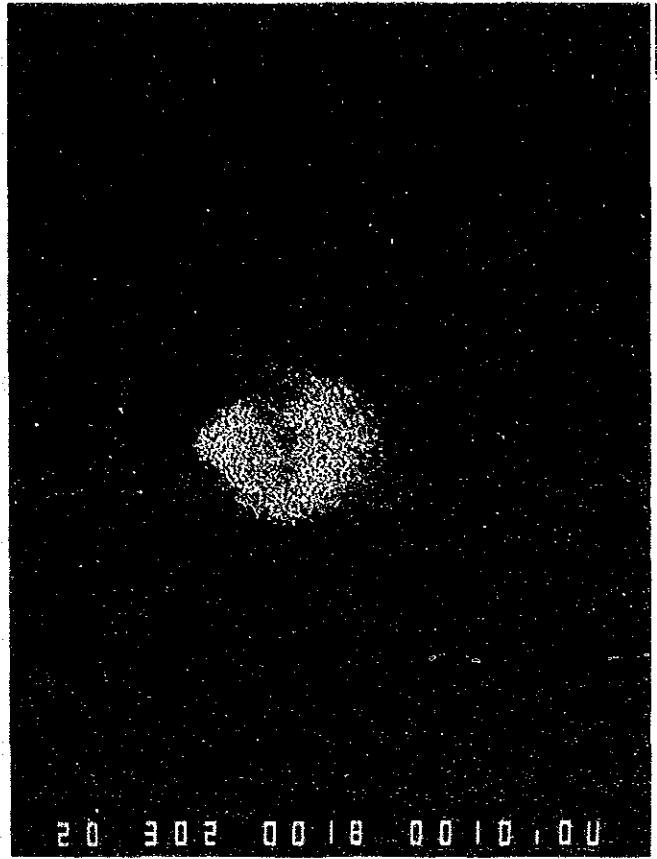
Sb



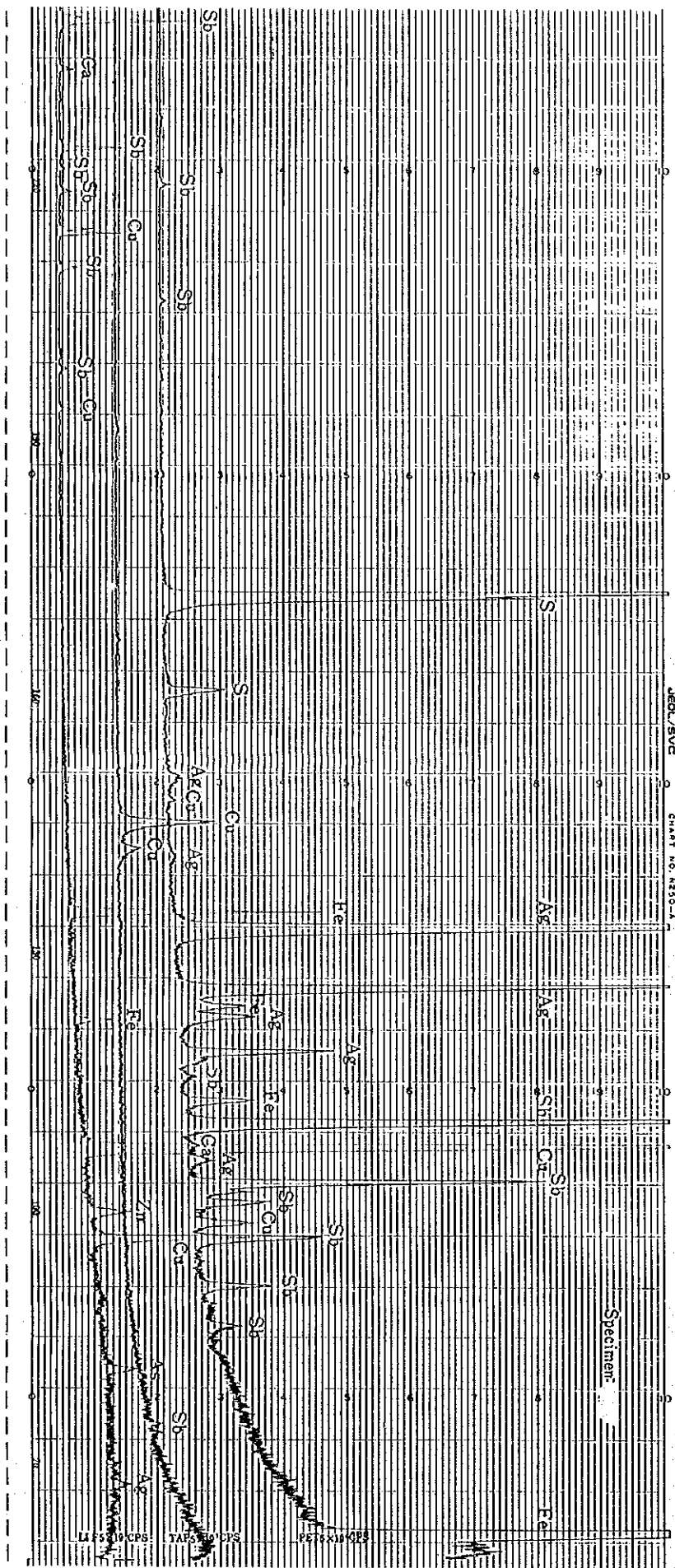
Fe



Zn



S







SEI

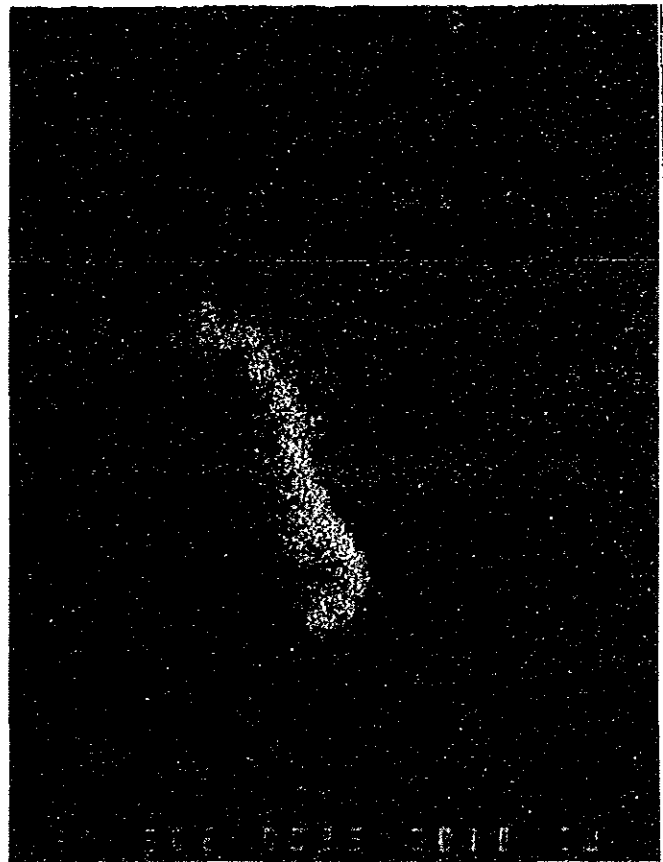
10  $\mu$



Compo



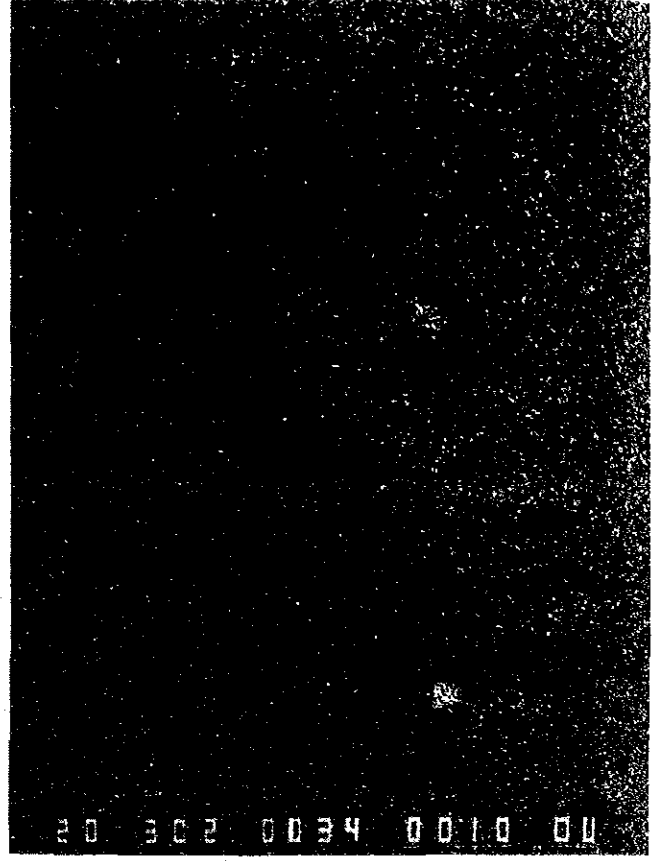
Au



Cu



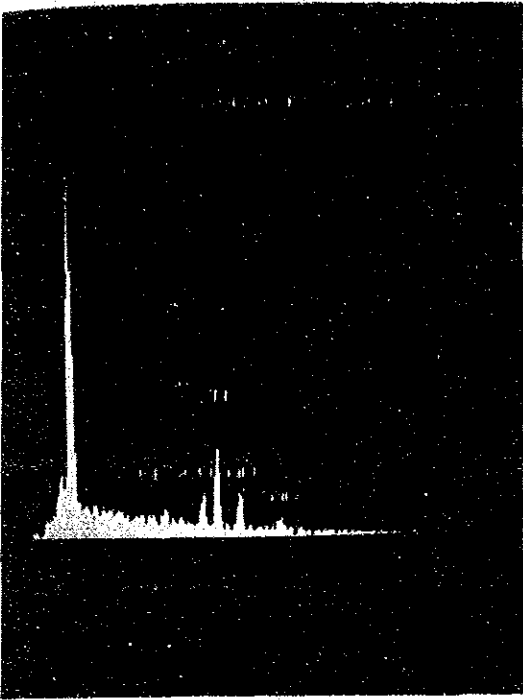
Zn



Fe



S

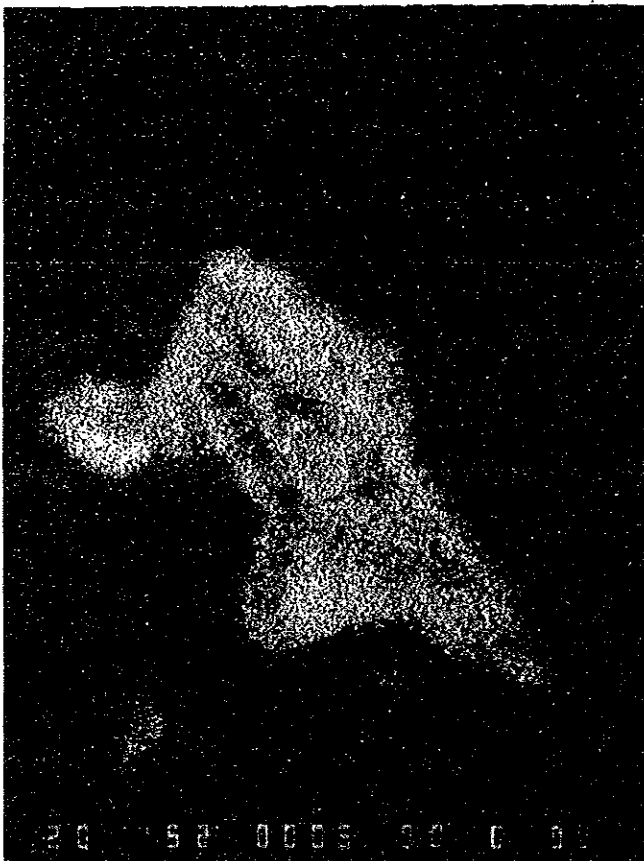




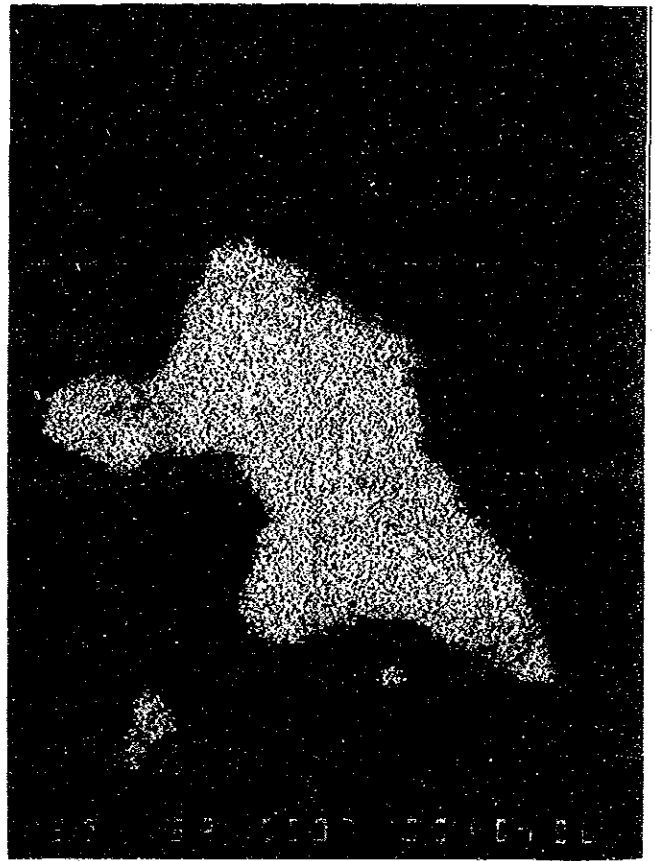
SEI



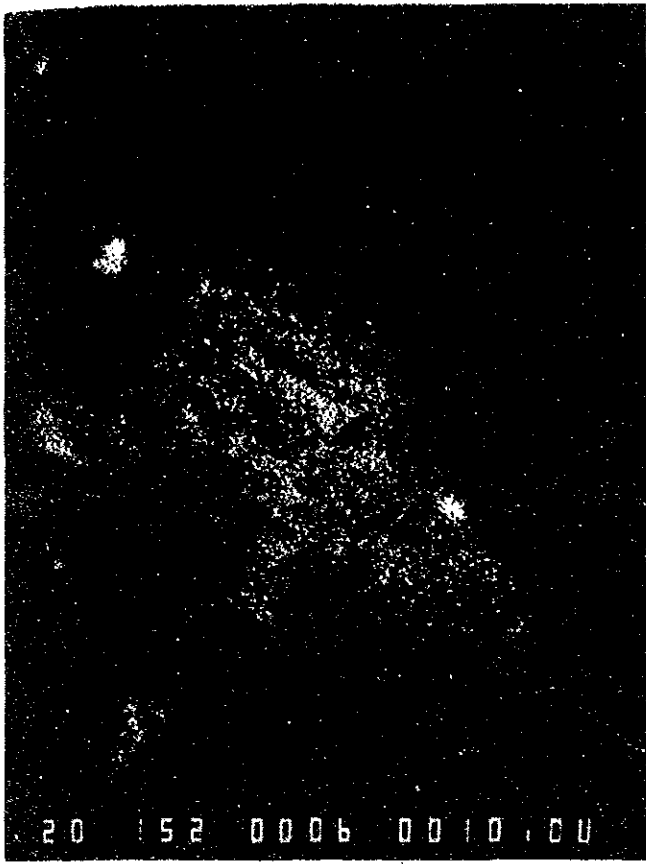
Compo



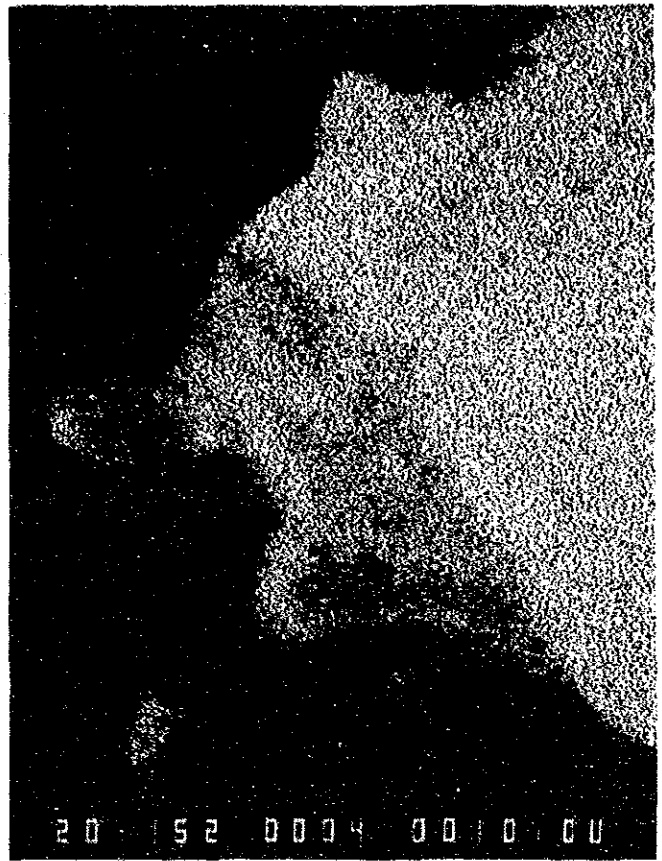
Ag



Sb



Zn



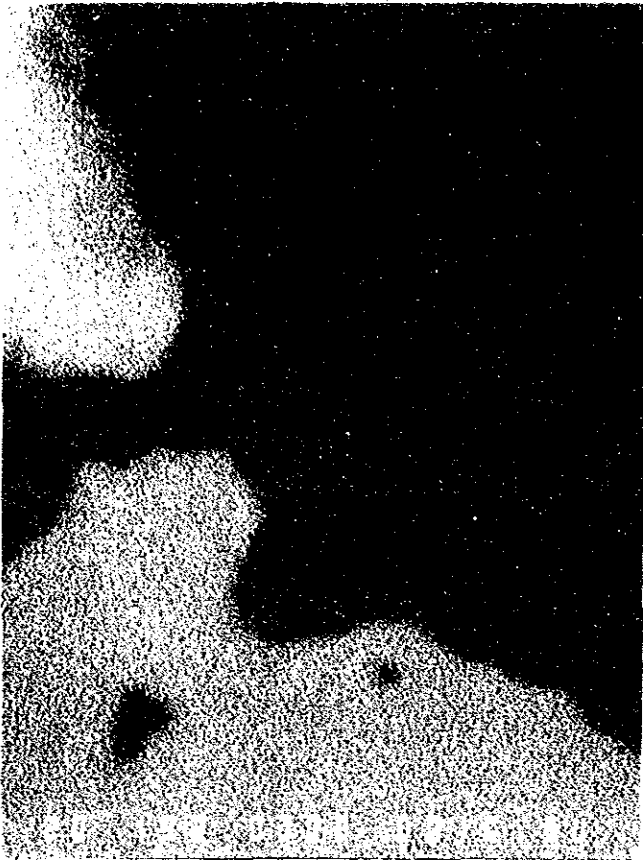
Cu



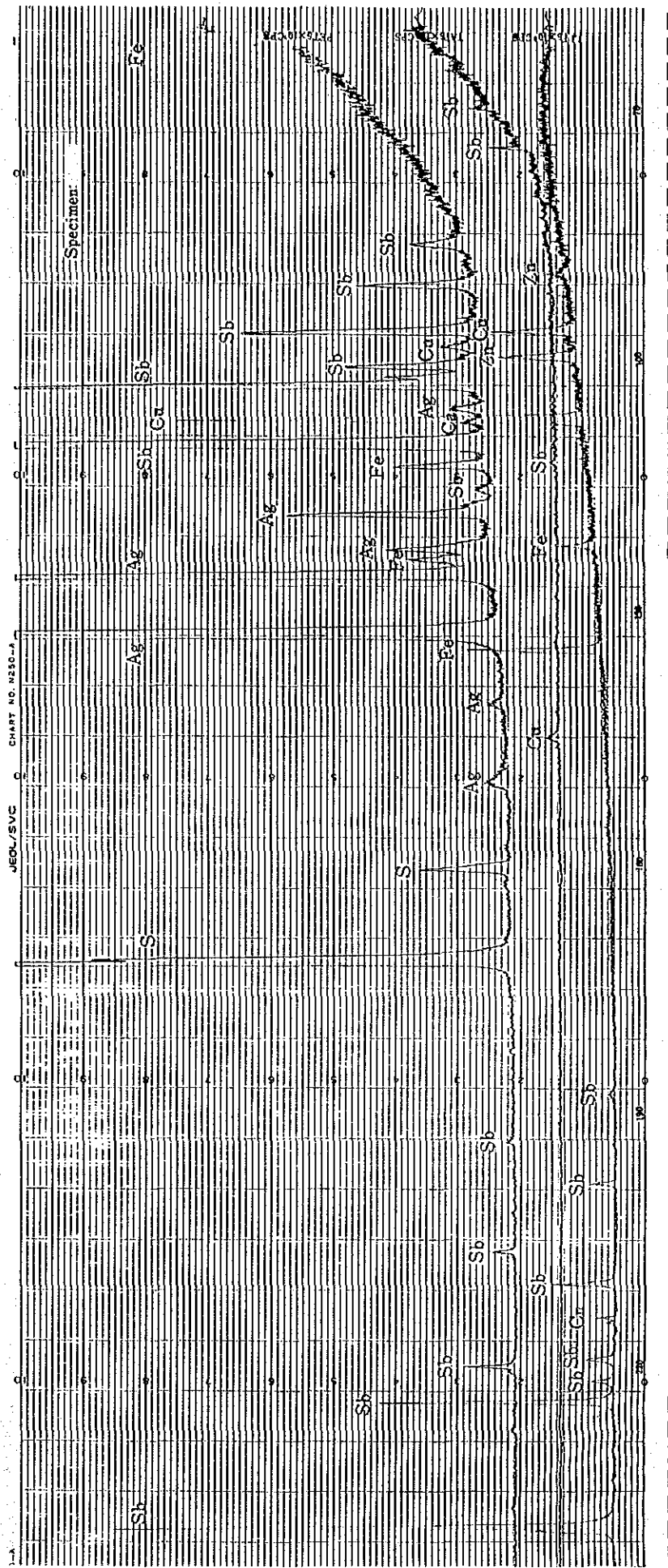
Fe



S



Ca

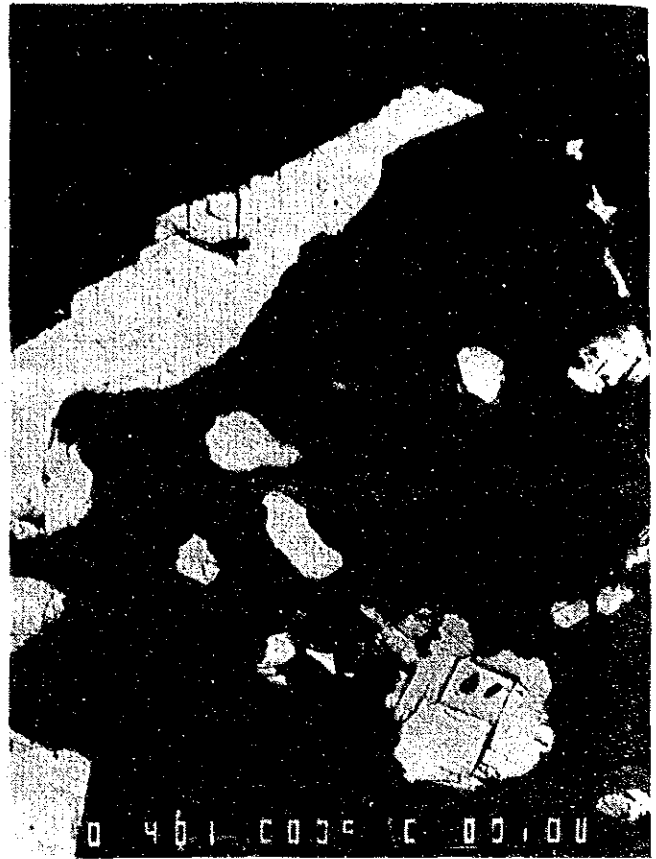


T I L I T A

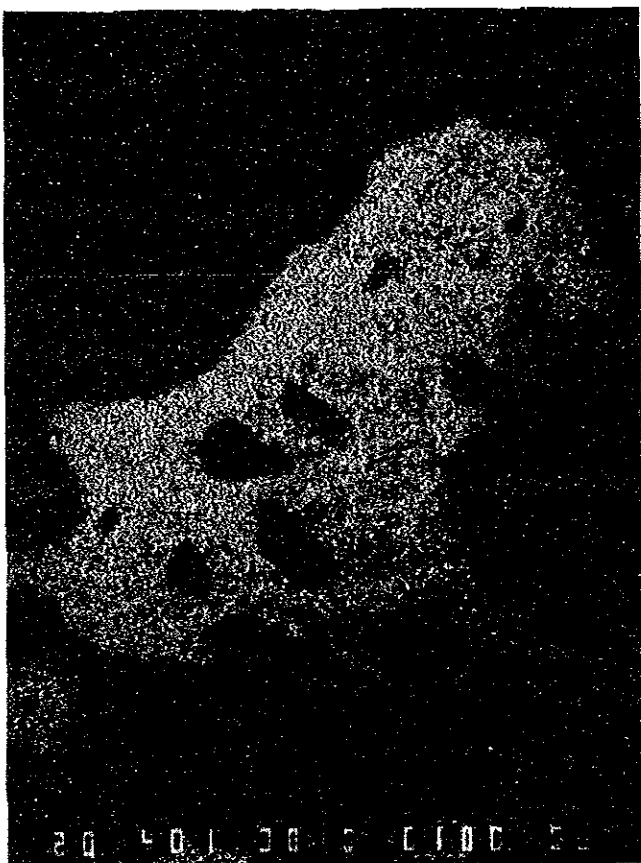


SEI

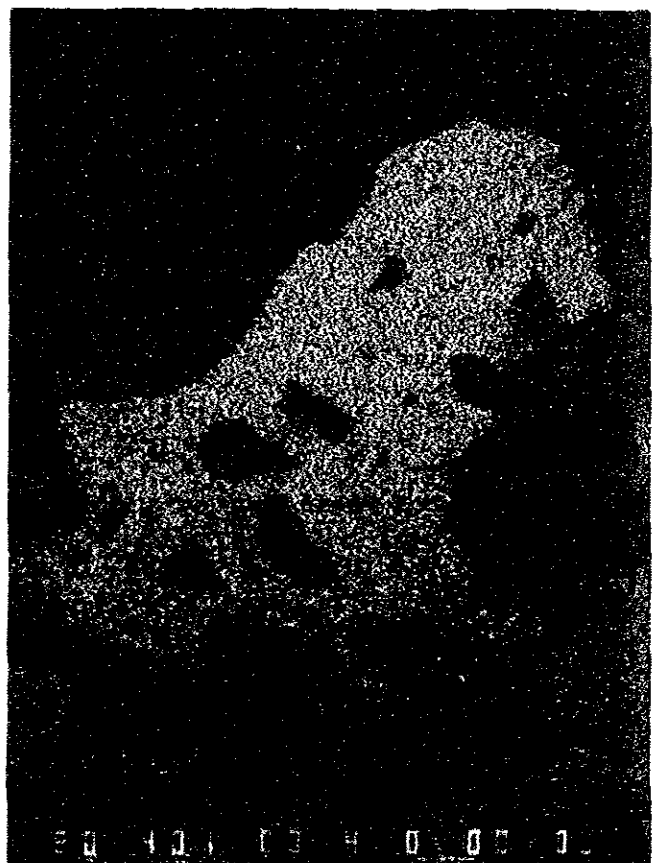
100  $\mu$



Compo



Ag

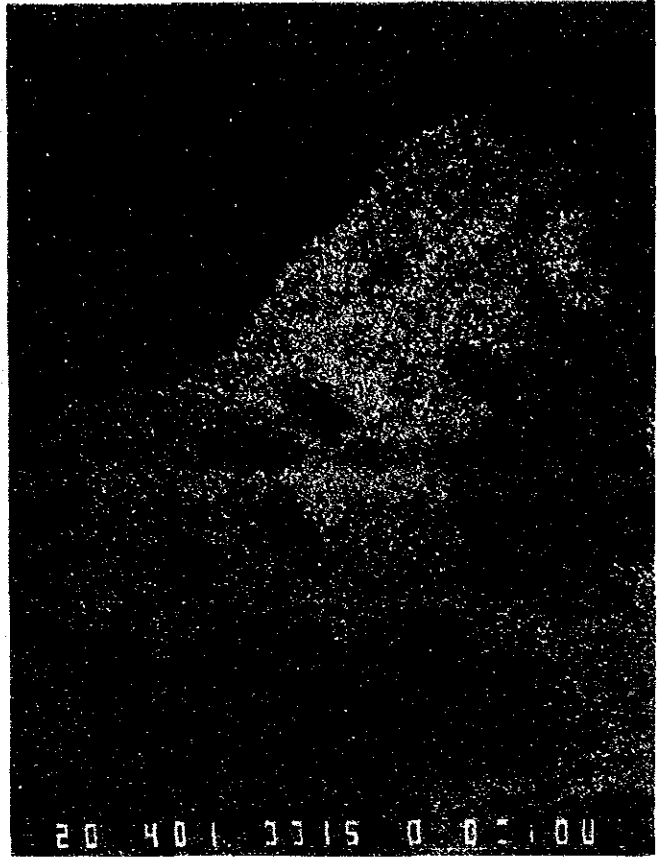


Sb





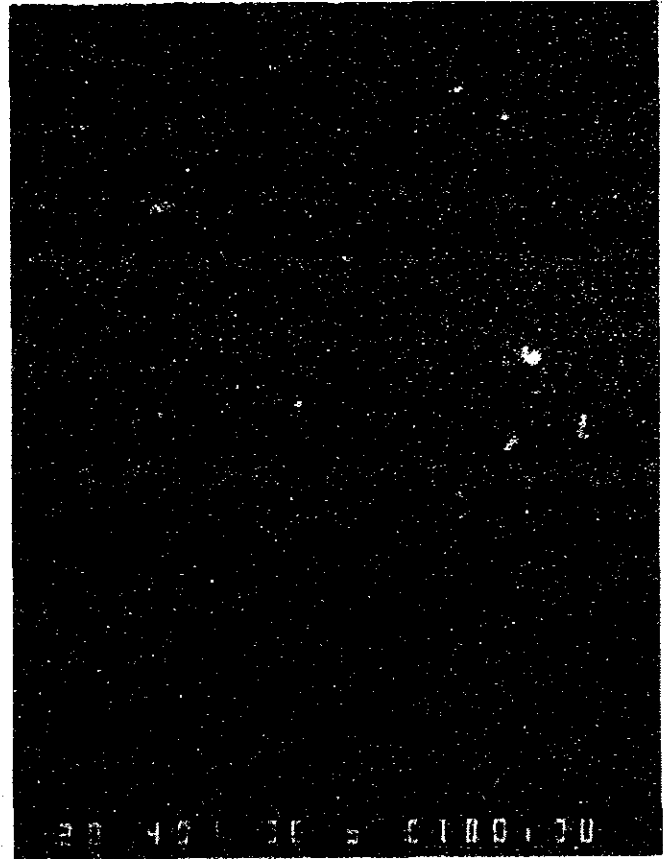
Fe



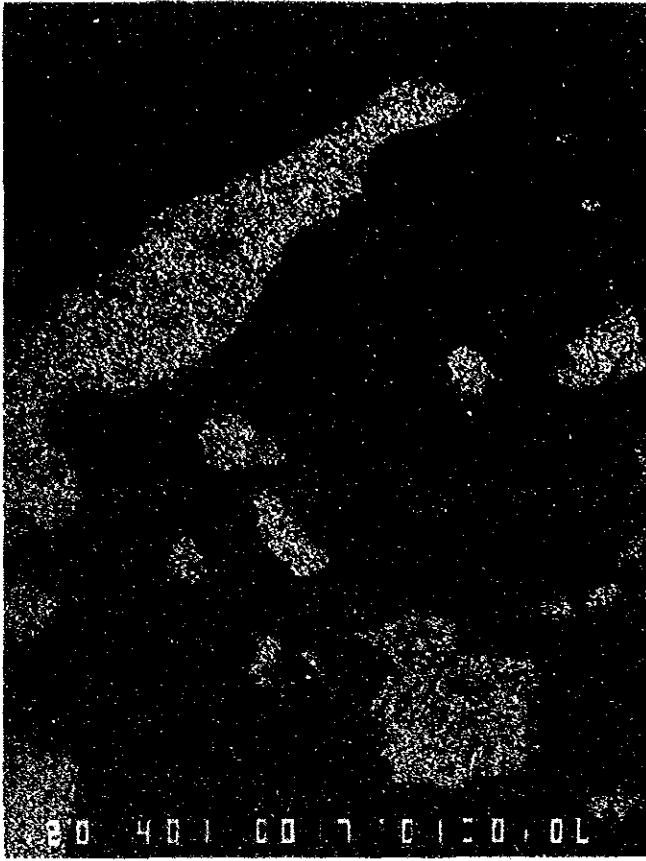
Cu



S



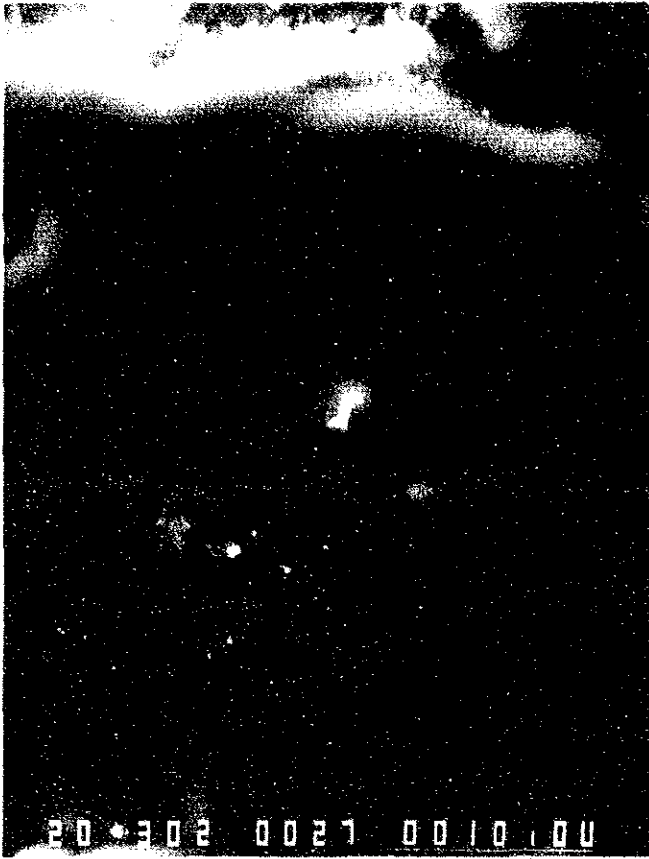
Zn



Pb

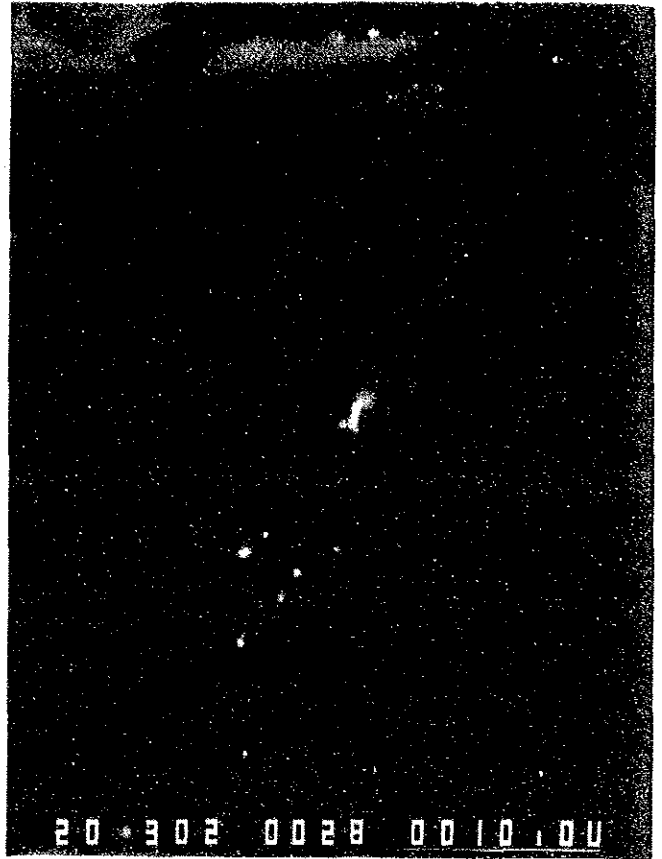


BARRADON



SEI

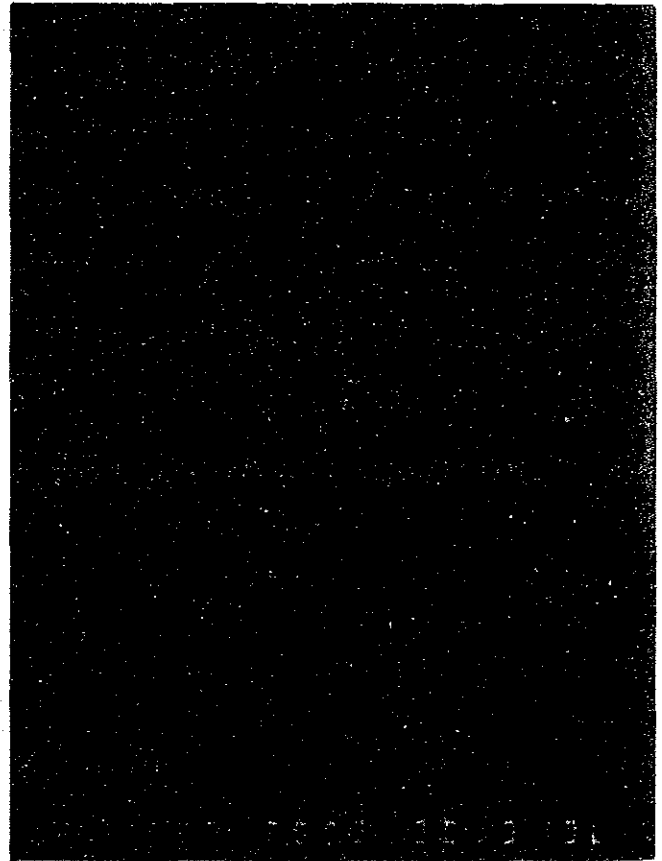
10  $\mu$



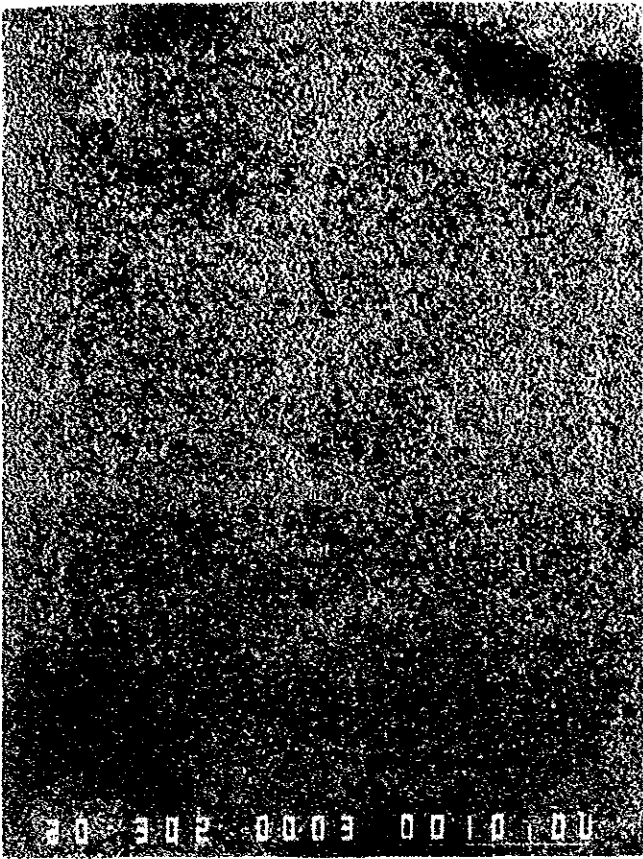
Compo



Ag



S



Si

