# AWATTO

# June 17th, 1942.

 $\underline{\mathbf{R}} \ \underline{\mathbf{E}} \ \underline{\mathbf{P}} \ \underline{\mathbf{O}} \ \underline{\mathbf{R}} \ \underline{\mathbf{T}}$ 

## of the

# ORE DRESSING AND METALLURGICAL LABORATORIES.

Investigation No. 1249.

è,

# Flotation Concentration of Manganese Ore from Manuels Manganese Deposits of Conception Bay, Newfoundland.

(Copy No.\_\_\_.)

AWATTO

June 17th, 1942.

# REPORT

# of the

## ORE DRESSING AND METALLURGICAL LABORATORIES.

Investigation No. 1249.

Flotation Concentration of Manganese Ore from the Manuels Manganese Deposits of Conception Bay, Newfoundland.

Shipment:

Four bulk samples were received on March 26th, 1942, from the Manuels manganese deposits of Conception Bay, Newfoundland. The samples were submitted by Claude K. Howse, Associate Government Geologist, Geological Survey, St. John's, Newfoundland, at the request of Dr. G. A. Young, Chief Geologist, Mines and Geology Branch, Department of Mines and Resources, Ottawa, (Shipment, cont'd) -

Ontario.

The bulk samples were channel samples taken across the beds of the deposit where it outcrops on the south side of the Manuels River valley.

Bulk Sample No. 1. - 481 pounds - a channel, 1 foot 11 inches long, taken across the manganese beds from the uppermost section of the deposit.

Bulk Sample No. 2. - 1134 pounds - the next 4 foot 8 inch section of the beds.

Bulk Sample No. 3. - 1063 pounds - bottom 5 foot section of the beds.

Bulk Sample No. 4. - 226 pounds - consisted of the section of Bulk Sample No. 2 and the uppermost 14 inch section of Bulk Sample No. 3.

### Sampling and Analysis:

The samples were crushed, ground, and sampled by standard methods. Analysis showed the following:

		Bulk Sample <u>No. l</u>	Bulk Sample No. 2	Bulk Sample <u>No. 3</u>	Bulk Sample <u>No.4</u>
Manganese,	per cent	5,68	10.69	9,27	10,35
Iron,	tt	9,26	5,67	5.21	5.37
CaO (acid so]	luble)"	3.09	2,96	2,50	2.81
MgO "	tt tt	1.84	1.22	1.16	1,19
Phosphorus	tł.	0,09	0.07	0,10	0.06
Sulphur	tr.	0,36	0.13	0.12	0.10

### Characteristics of the Ore:

Polished sections prepared from specimens of the samples were examined under the reflecting microscope to determine the metallic minerals in the ore. The examination showed that the metallic mineralization was rather sparse and represented almost entirely by pyrite. This mineral is disseminated through gangue as small masses and coarse to fine grains and crystals which contain numerous tiny inclusions of gangue. Occasional small grains of chalcopyrite are visible in gangue

and in pyrite.

Thin sections were prepared and examined under a microscope, for the purpose of determining the character of the ore, by Dr. J. D. Bateman, Bureau of Geology and Topography, Ottawa, who reports as follows:

# REPORT ON MANGANESE SAMPLES FROM MANUELS, NEWFOUNDLAND.

## Summary

Examination of one thin section of material from each of the four samples submitted by the Bureau of Mines failed to disclose any pertinent information on the mineral association. This is because it was not possible to resolve the minerals under the microscope owing to the extreme fineness of grain of most of the material. The samples were then investigated by microchemical methods and staining procedure, and the information gained in this way is correlated with the geological and chemical work of Dale The results of this investigation indicate that most of the manganese occurs as a carbonate associated with a complex carbonate group in red and green argillaceous carbonate rocks. The manganiferous carbonates are finely disseminated throughout the rocks, and are also concentrated in (a) carbonate nodules, (b) pale green cherty lenticles and (c) red iron oxide laminae. These manganese-rich structures are not easily amenable to mechanical methods of concentration, but most of the manganese content of the specimens is soluble in acids without difficulty.

## Geology.

Manganese occurs at Topsail, Manuels, Long Pond,

122

Chapel Cove, and Brigus on Conception Bay, at Smith Point on Trinity Bay, and at Ships Cove, Placentia Bay. The different occurrences are apparently at the same stratigraphic horizon in green and red shales of late Lower Cambrian age. The manganese-bearing zone is overlain by green shales containing <u>Paradoxides</u> and is underlain by green shale containing <u>Protolenus harveyi</u>. At Manuels, this zone is 13.7 feet thick and consists essentially of green and red argillaceous carbonate rocks containing manganese carbonates, and with hematite, barite, and tricalcium phosphate as accessories. The manganese is contained in thin, jasper+like green and brown bands, in nodular beds, and in argillaceous and calcareous beds. The following section is confined to the manganese-bearing zone near the locality where the samples were taken. The beds strike roughly east-west and dip 10 degrees north.

### Manuels Brook.

Thickness, in feet	Lithology
1.0 1.4 0.5 3.5 0.5	Shaly phosphatic pebble bed Black nodular green shale Red manganiferous shale Jaspery manganiferous lenticular shale Red and green jaspery manganiferous
0.3 0.7 0.5 0.2 5.1	shale Red slate Red and green manganiferous shale Red shale Red manganiferous shale Manganiferous nodular shale.

### Examination of Thin Sections.

Each of the four samples submitted consisted of a number of rock types and, of these, four thin sections from representative specimens were studied. A few mineral areas could be determined as relatively large clusters of carbonate, but it was of course not possible to distinguish the species. Hematite, particularly in the red beds, occurs as evenly distributed reddish-brown flecks in a light coloured extremely fine-grained groundmass, but no manganese oxides were seen. A blade of barite was observed in one section. Nodular and concretionary structures are prominent, but the material is indeterminable because, as Dale said, "of the impalpable fineness of grain."

## Chemical Investigation of Samples.

Dale made a number of analyses of different materials in the manganese zone, and these are shown in Table I correlated with the geological section. In the present investigation, material from 19 specimens was powdered, treated with cold HCL, heated, and then tested for manganese by the standard sodium bismuthate method. The resulting permanganate precipitate was pale pink to deep carmine depending upon the relative

amount of manganese present. The results of this investigation are tabulated in Table II, and indicate that the manganese content is roughly proportional to the carbonate content. There is also a suggestion of considerable variation in the species of carbonate present.

Polished surfaces of 13 specimens were then stained in order to distinguish calcite from any other carbonates present. The copper nitrate method with fixation in ammonia according to Rodgers<sup>(2)</sup> was used. Only one of the specimens was found to contain calcite which occurred with other carbonates in an irregular, nodular-like form in green shale. Following this procedure the surfaces of the specimens were then re-polished and stained in such a way as to produce brown manganese protoxide on the manganese-bearing minerals (see photographs). The staining tests are tabulated in Table III. It was found that the pink and grey carbonates stained deep-brown, indicating a relatively high manganese content; the white carbonates stained pale-brown; and the green cherty layers and red laminae stained an intermediate brown. Most of the megascopically visible carbonate is in the form of nodules, but the staining tests showed that finegrained manganese-bearing carbonates are disseminated throughout most of the specimens.

In the manganese deposits at Batesville, Arkansas, which are in many respects similar to the Newfoundland occurrences, Miser<sup>(3)</sup> found four groups of carbonates as follows:

Per cent Mn

(1)	Pink carbonate (rhodochrosite)	33.8 = 36.8
(2)	White carbonate	Low
(3)	Grey carbonate	32.6 + 38.5
(4)	Red or reddish-brown carbonate	20 - 30

These figures compare with about 47 per cent manganese in pure rhodochrosite. There is, in addition, at Batesville another group of manganese-bearing carbonates that consists of a mottled mixture of red and black carbonates, generally with some pink and white carbonates.

A study of the chemical analyses shown in Table I suggests that the manganese at Manuels occurs largely as carbonate, and recalculations of the analyses show that the MnCO3 content would vary from 10.23 per cent in the red band to 44.39 per cent in the green band. These calculations, however, do not allow for any of the ferrous iron to occur as a carbonate and, as MnCO3 may contain up to 40 per cent FeCO3 in solid solution, it is probable that the manganesebearing carbonates also contain ferrous iron. On the other hand, the only specimen that stained positively for calcite also stained positively for manganese, indicating a low manganese variety of manganocalcite. Krieger (4) finds that manganocalcite is not a definite mineral like dolomite, but that there is a relationship between the physical and structural (X-ray) properties and per cent manganese content, and that there is a solid solution series between calcite and rhodochrosite. The recasts of the analyses indicate a considerable content of CaCO3, but the staining tests indicate

that there is almost no free calcite. It is evident that the CaCO3 is associated with a complex group of carbonates that contains iron, manganese, and magnesium.

Dale noted that Cl<sub>2</sub> was evolved by the action of HCl on some of his specimens, indicating that some manganese in excess of that amount necessary to form carbonates is present as a peroxide. No manganese oxides were observed in the hand specimen or microscopically, but the recasts of the analyses show some manganese oxide left over. In the green band there is an excess of ferric over ferrous iron and in the green shale there is almost as much ferric as ferrous iron. As these beds are green the ferric iron is probably present in some other mineral than hematite, and it may be contained in a silicate. Such a silicate might also contain the excess manganese. On the other hand, the red laminae stain positively for manganese, and it is possible that some manganese oxides are present, but are masked by the **colouroof** the hematite.

## Conclusions.

Most of the manganese in the specimens from Manuels, Newfoundland, occurs in complex carbonates that are solid solutions of MnCO3 with FeCO3 on one hand and with CaCO3 on the other. The carbonates are finely disseminated throughout red and green shales, but the manganese is limited to a definite horizon that varies from place to place. Within this horizon there are local concentrations of manganese in concretionary nodules, cherty lenticles, and some hematite=rich laminae. The accompanying photographs show typical specimens of nodular and laminated material before and after staining for manganese. The areas that, by comparison, are darkened on the stained specimens, indicate the localization of the manganese. The local concentration, as well as the dissemination of manganese carbonates, dise to be considered a primary occurrence. In the specimens examined from Manuels there is little evidence of any alteration that has resulted in a reconcentration of the manganese.

The primary carbonates at Brigus have been oxidized to psilomelane that forms a small deposit of commercial manganese ore. Elsewhere at this horizon conditions may exist that have favoured a reconcentration or residual enrichment of manganese.

#### REFERENCES

- (1) Dale, N.C., Proc. Amer. Phil. Soc., vol. 54, 1915, pp. 371-456.
- (2) Rodgers, J., Amer. Jour. Sci., vol. 238, 1940, pp. 788-798.
- (3) Miser, H.D., U.S. Geol. Surv., Bull. 921-A, P. 13.
- (4) Krieger, P., Amer. Min., vol. 15, 1930, p. 23.

(Tables and Figures follow)



Carbonate Tetrahedron.

The pink carbonates, which are highest in manganese, probably lie in the northwest quarter of the tetrahedron; whereas the grey carbonates, also of high manganese content, lie in the southwest quarter. The relatively low magnesium content of Dale's analyses suggests that most of the carbonates occur in the western half of the tetrahedron. The absence of calcite, as indicated by staining, probably means that most of the carbonates lie closer to the south pole than the north pole of the tetrahedron. This suggestion is supported by the relatively large ferrous iron content. On the basis of available information, most of the high manganese carbonates lie within the circle.

t start to

				i du timb						
:;E	Litholo y Chi	cknes	15 	· · · · · · · · · · · · · · · · · · ·		r	.nnlyses	····	<del></del>	· · · · · · · · · · · · · · · · · · ·
	Grigth Shale spicesurger									
	-+									
	· · · · · · · · · · · · · · · · · · ·	::::	::::			:::::			::::::	
	Tab of demandate 30As	1::::							:::::	
	Phasahetic nodular mandad.	1::::	1:::.				A1101 -	27.29		
1	With white Westbering	1::::	North	313 01			62.0	29.73		
	property at battard and top		Aires-	weeter			A905	12.40	:::::	
	· · · · · · · · · · · · · · · · · · ·		crool	-s any				73.90		
	Breen tosule shole with	1								
	Fanshievous black had bles									
		::::	::::			::::::				
								111 111	:::::	
	····		: : :			5102 -	16, 42	Mao	9	50
	Heavy, route, red. not sh	1::::				A1, 03	4.33	· · · · · · · · · · · · · · · · · · ·	03 - 19 18	67
	Calerte, borite, herizative	1::::	Augl	vals of bed		Ca.a Mao	14.40	Cast.	сц, · · 7	50
	Amoson re, rawagon ese uzlor, and	1	and	recost		13 05	2.50	2410 110	150 IS	18
							100,85		/40	· · · · · · · · · · · · · · · · · · ·
	man and and and a second and a second and	1:1								
	green shall				<u>1.1871</u> .					
		L	::::						· · · · · · · ·	
		+						::: :::		
	Part prairiadular and ashine stale									
		::::	::::							
	With row aspery manganese									
	Carepaure, lanin ar leas	<u> </u>			!			:::::::		
	Lectro and march with preve Jasery							· · · · · · · · · · · · · · · · · · ·		
	Lenneviar preen and red manyad-					, : ::::		::: :::	:::::	
	TETOVA SEGINS IN IN LOLATION SVING SIGIL				-	• • • • • •				
	Contraction of the second second	ļ		TANK	Bands	GCEED	A 400	4004	P 8/10	<u>.</u>
	nadular and office shale		• :	1 5.0.	27.61	5.02	224	5.91	10	23
	· · · · · · · · · · · · · · · · · · ·			1403 FE 03	- 6,93 - 1,25 - 1,69	.Aho3		· · · · A11.01		12.47. 3.2.
	Grasa avertes, et manyanese	1	· ·					· · · · · · · · · · · · · · · · · · ·		54
	Carbonare, and inter harminated	1	1 .		9.94	640			· · · · · · · · · · · · · · · · · · ·	17.11111111
	Carbonare, and inter tornulates ree, green, and brown manyon- Iteroys bands			Lao Migo Hos	9.94 3.44 4.71	(40 190 H19 Co1	2.50 2.90 2.90 2.90	C40 Mga 1710	3	21 21 23
	Carbonare and interpetintated red green and scrown mappan Iterovs bands Purtuish manyanterous no Julior Shale with learning was nowies of			Cao Migo Alos Col Col	9.94 - 3.14 - 4.11 - 10.57 - 10.57	(40 190 1420 60	55 53 1130 2 30 2 90 200 700 09		3 3 	11 02 31 23 80
	Carbonare, and har sound to be		Analy	200 140 140 140 140 140 140 140 1	9.94 3.44 - 3.44 - 4.13 - 10.57 - 0.57 - 0.57 - 19.71 - 10.23	240 190 129 201 Recas	11 30 11 30 2 30 2 98 2 98 100 09 4 4 4 34	240 1990 1710 291	لي 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	02 37 29 99
	Carbon are and information and in the second and for any many many interest and second a		Analy of B	Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo Allo	9.94 3.49 4.73 10.00 19.73 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23	10 190 120 120 120 120 120 120 120 12	55 55 11 30 2 30 2 90 2 90 2 90 2 90 4 4 4 4 4 4 5 0 6 0 6 0 1 1 1 1 1 1 1 1 1 1 1 1 1	440 Mgg 7419 7419 7419 7419 7419 7410 77 77 77 77 70 70 70 70 70 70 70 70 70	یں بر بر 28 28 28 28 28	02 77 37 37 39 90 90 90 90 90 90 90 90 90 9
	Carbon are on inter Aritinates Tes green and brown manpon Theroys bands Provide Aritige and there is a content Provide a second and there is a content area second and there is a content of the bands, lentreles, and and the second there bands, lentreles, and and the second the bands, lentreles and and the second the bands, and the second and the second and the second the bands, and the second and the second and the second the second and the second and th		Analy of B	And Ang Ang Ang Ang Ang Ang Ang Ang	9.94 3.44 4.73 10.57 10.57 10.73 19.71 19.71 19.73 19.73 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.74 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75 19.75	Maco Maco Recas Maco Maco Maco Maco Maco Maco Maco Maco	55, 53 11, 30 2, 90 2, 90 2, 90 2, 90 2, 90 4, 51 4, 31 4, 31 4, 11 5, 12 0, 86	440 Mgg 440 440 440 440 440 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg 440 Mgg Mgg Mgg Mgg Mgg Mgg Mgg Mgg Mgg Mg	28. 28. 28. 28. 28. 28. 28. 28. 28. 29. 29. 29. 29. 29. 29. 29. 29. 29. 29	22 32 32 32 32 32 32 32 32 32
	Carbon are, and information and in the grean and brown manpon There ve bands Shake with the method set of the form State with the method set of the set of the set of the set of the grean set of the set of the set of the set This grean set of the set of the set of the set Man of the set of the set of the set of the set Man of the set of the set of the set the bands, the set of the set of the set the bands, the set of the set of the set the bands, the set of the set of the set the bands, the set of the set of the set the bands, the set of the set of the set the bands, the set of the set of the set the set of the set of the set of the set the set of the set of the set of the set the set of the set of the set of the set the set of the set of the set of the set of the set the set of the set of the set of the set of the set the set of the set		Analy of B	And And And And And And And And And And	9.004 9.004 9.004 4.11 4.11 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.23 10.24 10.23 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.25 10.2	Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco Maco	55, 53 11, 30 2, 90 2, 90 2, 90 2, 90 2, 90 4, 51 6, 90 4, 21 5, 16 0, 86 1, 8, 64 1, 9 1, 1, 10 1, 10 1, 10 1, 10 1, 10 1, 13 1, 130 1, 100 1,	- 440 - 490 - 490 - 400	24 24 24 24 24 24 24 24 24 24 24 24 24 2	22 32 33 90 43 90 44 41 41 41 41 42 40 42 40 42 40 42 40 42 40 42 40 42 40 42 40 42 40 42 40 42 40 42 40 42 40 42 40 42 40 42 40 42 40 42 40 42 40 40 40 40 40 40 40 40 40 40 40 40 40
	Carbon are and in the Arithmeter Test grean, and in for Arithmeter Portion Aritig and Srown manpon Portion Aritig and Srown and Aritig Shake with reprints was considered This grean and for the sad considered This grean and for the sad considered This grean and for the sad considered the bands, control as for the second hard bands, control as for the second hard bands, control as for the second bands, of Andreg and second Fine grean and with the shake Fine grean are gritty, 100 shake Nation a trova and for the second		Analy of B	Alex Alex Alex Alex Alex Alex Alex Alex	9.004 9.004 9.004 4.11 4.11 4.11 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.12 4.1	1110 110 110 110 110 110 110 110	553 53 11 30 12 30 12 30 12 00 12 00 12 00 10 00 10 0 10 10 10	(413 //19 //19 //10 //10 //10 //10 //10 //10	24 24 24 32 32 32 32 32 32 32	22 23 23 24 29 20 20 20 20 20 20 20 20 20 20 20 20 20
	Carbon are on in inter Arithmeter Tes grean and brown manpon There ves b and s Shape with terminer vest no very Strate with terminer vest courses of area years induced with sever vest the banes tertiets in a course of the banes tertiets in a course of the banes tertiets of the course of the sever bands, of many and sever Find years with the courses from a sever of the sever from a sever of the sever for the sever of the sever bands, of many and sever from young, with, is shall have a sever of the sever to sever of the sever of the sever of the sever to sever of the sever of the sever of the sever to sever of the sever of the sever of the sever to sever of the sever of t		Analy 0,+ B	And Ango Ango Ango Ango Ango Ango Ango Ango	5000 5000 411 412 1000 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 1001 10	1110 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100	55 43 1/2 30 2/2 30	243 7/190 201 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100 7/1 100	249 24 24 24 24 24 24 24 24 24 24 24 24 24	22 23 23 29 20 29 20 20 20 20 20 20 20 20 20 20 20 20 20
	Carbon are on in inter Aritinates Tes grean and brown manpon Thero vis b and s Shape with termets vas courses of aritic grean and the set of the set Shape with termets vas courses of the builds termets vas courses of the builds termets aritic and others bands, et mang anese exists and cores of the bands, et mang anese exists and cores of the kine cyrunes, with, is shale Manyan terves and calcures		Analy of B.	Ango Ango Ango Con Ses Anno Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Condo Co	5004 514 411 4013 1971 1971 1971 1931 1931 1931 1931 1931 1931 1931 1931 1931 1941 1947 1947 1947	140 140 140 140 140 140 140 140 140 140	51 433 2 50 2 50 2 50 2 60 2 60 2 60 2 60 2 60 2 60 2 60 2 70 2 70	243 5 749 0 749 0 74	1 2 2 2 2 2 2 2 2 2 2 2 2 2	22 23 29 29 29 29 20 20 20 20 20 20 20 20 20 20 20 20 20
	Carlo on are, and in the Arthunated Ted great, and brown manpon- Itero vis b and s. Portakin Arthon vision terové, ino futier Shape with terrets use coveres of arthun great and in terves use of the builds in the terrets and orders in ter homonaced with rodust bands, et manganese exists and Carle office And yant cover and carlos Manyan terves and carlos Manyan terves and carlos		Analy o+ B	Ango Ango Ango Con Sees Anneo ands Control Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Silve Si Silve Silve Silve Silve Silve Silve Silve Si	5004 514 411 4213 4213 4213 4213 4213 4214 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4235 4245 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 4255 42555 4255 4255 4255 4255 4255 4255 4255 4255 4255 4	140 140 140 140 1410 1410 1410 1410 140 14	51 433 2 50 2 50 2 50 2 60 2 60 2 60 2 60 2 60 2 60 2 60 2 60 2 70 2 70	243 7443 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 7444 74447 74447 7444 7444 7444 7444 7444 7444 7444 7444 7444	3 3 4 4 5 3 4 5 3 4 4 1 4 3 3 5 3 4 4 4 3 5 3 5 4 4 4 3 5 3 5 4 5 4	22 23 29 29 20 20 20 20 20 20 20 20 20 20 20 20 20
	Carlo on are only in the Arthunated Ted great, and in forwar manpon Thero vis b and s Shape with termets was considered the great and brown and the sol State with termets was considered the particular that brown waven the particular that the particular that the particular the particular that the particular that the particular the particular the particular that the particular the partis the p		Analy 0,+ B	Ango Ango Ango Con Ses Maco Ses Maco Ses Control Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Si	5004 514 411 4013 1971 1971 1971 1971 1931 1931 1931 1931 1931 1931 1931 1931 1931 1941 1931 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 1947 19	1440 1410 1410 1410 1410 1410 1410 1410	51 433 2 30 2 30 2 900 2 9	243 7479 7479 7479 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 74700 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470 7470	200 	22 23 29 29 29 29 20 20 20 20 20 20 20 20 20 20 20 20 20
-	Carbon are on in inter Arithmeter Teg great, and brown manpon Thero vis b and s Porrich Arting vanterov 5, no forer Shale with termeter us counter of the great point for the set of and vis of the great converter and aver the great converter and aver bands, st mang aness of all and the great for the great for the great for a set the great for a set the great for a set the great for the great fo		Analy 0+ B	And And Sees Anne Silver Annes Annes Annes Silver Silver Silver Annes Silver Silver Silver Silver Silver Silver Annes Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Silver Sil	9009 9109 9109 9119 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121 9121	1440 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410 1410	51 433 72 50 72 50 72 50 72 50 74 51 74 51 7	2415 4419 4419 691 4419 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4410 4	24400 - 248 	22 23 29 24 29 29 20 20 20 20 20 20 20 20 20 20 20 20 20
-	Carlo on are ond in the Arthunated Ted great, and brown manpon Thero vis b and s Porrich Artnan yann terves, rio forer Shale with terrets was covered of arthur great and four to read of the forest terrets, and and was of the forest terrets, and and was of the forest terrets, and and was of the forest terrets, and and art of the forest terrets, and and art of the forest terrets, and the art the forest terrets, and the art the forest terrets, and the art the forest art of the art of the art the forest art of the art of the art the forest art of the art of the art the forest art of the art the art of the		Analy of Bo	And And Sees Anneo Sees Anneo Signads Chirage Signads Signad Signads Signad	9.004 9.14 4.11 4.12 4.12 19.12 19.12 19.12 19.23 19.24 19.24 19.24 19.24 19.24 19.24 19.24 19.24 19.25 19.24 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25	(40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40)	51 433 7 30 7 30 7 30 7 30 7 30 7 43 7 43 7 43 7 43 7 4 7 4 8 4 7 4 8 4 7 4 7 4 8 4 7 4 8 4 7 4 8 4 7 4 8 4 8 4 8 4 8 4 8 4 8 4 8 4 8	2415 4419 4419 691 4910 4910 4910 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2100 2	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	22 23 29 24 29 29 20 20 20 20 20 20 20 20 20 20 20 20 20
	Carbon are ond inter Articulated Ted great, and brown manpon Itero vs b and s Porrich Arting vanterov & no dvier Shale with termites was consistent trin, great and funt brown vever man politics consortates and oxides briter terming aness set and and Carbon are with the reduction brands, st mang aness set and rider are the And tring grant and carbon Plantan terming and carbon Plantan terming and carbon Carbon are a state of the Carbon are a rider and the Carbon are a rider and the for a state of the f		Analy of B.	Anger	9.004 5.44 4.11 4.12 4.12 19.12 19.12 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25 19.25	1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400	51 433 72 50 72 50 72 50 72 50 72 50 74 51 74 51 50 10 50 10 5	2415 7419 7419 7419 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7410 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400 7400	249 	22 23 24 24 24 24 24 24 24 24 24 24
	Carcensh, end created Carcensh, and created The great and brown manpon Therows b and s Porrich Thomy and prove in outer Shale with termines, use conserved the bares and that brown sever the bares and the sever the		Analy of B.	Another see		140 140 140 140 140 140 140 140 140 140	51 533 72 50 72 50 72 50 72 50 74 51 74 51 60 60 60 61 51 51 60 61 51 51 60 61 51 51 74 51 60 61 51 51 74 51 60 61 74 51 60 61 74 51 60 61 74 51 60 61 74 51 74 51 75 75 75 75 75 75 75 75 75 75 75 75 75	244 244 244 244 244 244 244 244	240 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	22 23 24 24 24 24 24 24 24 24 24 24
	Carlo on are ond in the Arthunated Ted great, and brown manpon Thero vis b and s Porrich Arting yantherov & no deter Shale with fermities, use checked of area, 's serry index and exercises of the barnet kenters, one hant brown seven the barnet kenters, one not des of man yones con brindes and oxides on er hannated with reddist Lands, st mang anese exide and Carcenters Manyan Tervis and Carcervous Manyan Tervis and Carcervous Manyan Tervis and Carcervous Carce of the seven saids are seven and the seven saids Manyan Tervis and Carcervous Manyan tervis and Carcervous Carcer of the said of the saids Carcer of the sa		Analy of B	Anstyrins C	5.44 5.44 4.11 4.11 4.12 1971 1971 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1931 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937 1937	(40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (	51 433 72 50 72 50 72 50 72 50 74 51 74 51 60 0 60 0 4 41 51 60 0 60 0 4 41 1 74 12 74 25 19 24 19 25 19 24 19 25 19 24 19 25 19 26 19 26 10	245 247 247 247 247 247 247 247 247	2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2440 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 2400 240 24	22 23 24 24 24 24 24 24 24 24 24 24
-	Carlo on are ond in the Arthunated Ted great, and brown manpon Thero vis b and s Porrich Arting yantherov & no dever Shale with termines, we receased Thun, great and funt brown sever the borner inno tont brown sever man yours consorties and oxides bands, st mang anese sexids and Carles PEE Fine - grounds, guitty, 100 shale Planyan Tervis and Calcertous The province consorties of all and Carles of E		Analy 0+ 25	Anstysis C Anstysis C Anstysis C Anstysis C Anstysis C Anstysis C Anstysis C Anstysis C Anstysis C Anstysis C		140 140 140 140 140 140 140 140 140 140	51 433 72 50 72 50 72 50 72 50 74 51 74 51 60 60 60 61 94 41 94 41 94 41 94 41 94 45 19 64 94 65 19 64 19 64 19 64 19 64 19 66 19 66 19 66 19 66 10 7 10 7 10 10 7 10 7 1	244 244 244 244 244 244 244 244	1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311 1311	22 23 24 24 24 24 24 24 24 24 24 24
	Carlo on are only in the Arthurated Ted great, and in the Arthurated The great, and brown manpon Therows b and s Porrich Arting yant terve in outer Shale with terticles, out evenes of arthur or and in the terver is and with of the barts tenters, out and was of man yours territies, out and was of many outers converties and outer bands, et mang anese exists and Carles of 25 That yours terver and Calcerrous The grant terver and Calcerrous Carlo of 25 The formation of a state Carlo of a state The second of the second of a state The second of the second of a state The second of the second of the second and the second of the second of the second terver and the second of the second of the second terver and the second of the second of the second terver and terver and Calcerrous The second of the second of the second terver and terver and the second of the second terver and terver and terver and the second of the second terver and terver and terver and the second of the second terver and terver and terver and terver and the second terver and terver and terver and terver and terver and terver terver and terver and terver and terver and terver and terver terver and terver and terver and terver and terver and terver terver and terver and terver and terver and terver and terver terver and terver an		Analy o,+ 25.	Anstysis c		140 140 140 140 140 140 140 140 140 140	51 433 72 50 72 50 72 50 72 50 74 51 74 51 60 61 60 61 4 41 5 11 74 12 74 25 19 24 19 25 19	244 244 244 244 244 244 244 244	3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	22 23 24 24 24 24 24 24 24 24 24 24
	Carlo on are only in the Arthunated Ted great, and brown manpon Therows b and s Porrich Artnay yanterows no develop Shale with termines, use needed of area, secret manual eveloped as of the barnet tenters, out not developed bands, et mang anese exide and Carle of 25 Thay an Terws and Calcerrous Thay an Terws and Calcerrous Carle of 25 Carle o		Analy o, + 25.	Anstysis Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another An		(40 140 140 140 140 140 140 140 1	51 533 72 50 72 50 72 50 74 50 74 50 74 51 50 60 50 60 50 70 50 70 5	244 444 444 444 444 444 444 444	33 34 34 34 34 34 34 34 34 34	22 23 24 24 24 24 24 24 24 24 24 24
	Carbon are ond inter Articulated Ted great, and brown manpon Therows b and s Porrich Arton yan terws in outer Shale with termines, us the desired Thus, great and inter brown sever the barnet tenters, out not desired inter bannotes of with reddish bands, et mang anese exide and Carbon Pls rune yruntes, gutty, tev shale Play an Terws and Calcorses rudeling, territor sources Carbon for and the sever find yan terws and Calcorses rudeling, territor sources find yan terws and Calcorses find yan terms and yan		Analy o,+ 25.	Another Store Stor		(40 (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (	51 433 72 50 72 50 72 50 72 50 74 51 74 51 60 60 60 61 94 41 94 41 94 41 94 41 94 41 94 45 19 64 94 65 19 64 19 7 10 7	244 444 444 444 444 444 444 444	3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	22 23 24 24 24 24 24 24 24 24 24 24
	Carbon are on in internet sentimates Ted great and brown manpon Therows b and s Porrich transpanterov for the sent Shale with termination of the sent Thus, great and fund brown sever the barnet tenters, out not des of man panets consumates and outes bands, et mang anese exide and Carbon Pls There yrunnes, grith, ice shale Thay an Terms and Calconsus The great and terminates Carbon for the sever terms of terms of the sever terms of terms of the sever terms of terms of terms of the sever terms of terms of terms of the sever terms of terms of		Analy o,+ 25.	Another Store Stor		(40 (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (	51 533 7 539 7 599 7	244 244 244 244 244 244 244 244	244 444 444 444 444 444 444 444	22 23 24 24 24 24 24 25 24 25 25 25 25 25 25 25 25 25 25
	Carbon are on in internet sentend ter Ted great and brown manpon There will be and s Porrich Thomy and throw S. No Uniter Shale with termination use vice and set Thun, great and inter brown seven the barts to the las, out and uses of many antes corbonates and oxides Shales et mang antes exide and Carbon Pls There yrunted, gritty, tev shale Thay an Terminate select Thay an Terminate and Calcorrous They and the terminates of the barts to the second second the second second second second the second second second second the second second second second the second second second second second the second second second second second second the second secon		Analy o,+ 25.	Another Star		(40 140 140 140 140 140 140 140 1	51 533 72 50 72 50 72 50 74 50 74 51 50 70 50 70 5	244 444 444 444 444 444 444 444	244 244 244 244 244 244 244 244	22 23 24 24 24 24 24 25 24 25 25 25 25 25 25 25 25 25 25
	Carloon are ond inter Arithmeted Ted great and brown manpon There will be and s Provide Aritical Second		Analy 0,+ 25.	Anothering Control of the control of		140 140 140 140 140 140 140 140	51 533 7 533 7 539 7 549 7 54 7 54	444 444 444 444 444 444 444 444	31 31 31 31 31 31 31 31 31 31	22 23 24 24 24 24 24 25 24 25 25 25 25 25 25 25 25 25 25
	Carbon are ond inter Arithmetel Ted great and brown manpon There will be and s Provident Transport anterwes in outer Shale with rearring the second second Thus, great and inter brown second the barts to the second and exercises inter bannotes with a cold second bands, et mang and calcorrows Thay an Terws and calcorrows Thay an Terws and calcorrows Thay an Terws and calcorrows The barts to the second second the barts to the second second bands, et mang and calcorrows The second second second the barts to the second second the second second second second the second second second second the second second second second second the second second second second second the second second second second second second second second the second seco		Analy o, + 25.	Anstrains C Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Ano	5.44 5.44 4.11 4.11 4.11 4.11 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1	(40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (40) (	51 633 72 50 72 50 72 50 70 19 60 19 70 19 60 19 70 19 7	244 244 244 244 244 244 244 244	244 244 244 244 244 244 244 244	22 23 24 24 24 24 24 25 24 25 25 25 25 25 25 25 25 25 25
	Carbon are ond inter Arithmeter Ted great and brown manpon There will be and s Privation Transpanters S. No Unior Shale with red the sust investor Shale with red the sust investor The brief and interest and orders of many oness consumates and orders Shales of manual ancse exists and Lands. et many and Calconsus The privation of calconsus The privation o		Analy o, + 25.	Anstrais Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone		1440 140 140 140 140 140 140 140	51 633 72 50 72 50 72 50 70 19 6 19 6 19 6 19 6 19 6 19 7 12 6 19 6 19 7 12 7 12 8 10 19 19 19 19 19 19 19 19 19 19	244 244 244 244 244 244 244 244	230 31 31 31 31 31 31 31 31 31 31	22 23 24 24 24 24 25 24 25 25 25 25 25 25 25 25 25 25
	Carloon are ond inter Arithmeted Ted great, and brown manpon Therows b and s Provident Transpanterovs no dever Shale with red the sust needes of area 's strey manuances' exceeded of the bares tenters, out and the solid and excess the bares tenters, out and and areas bands, et mang and calcorrous Thay an Trans and Calcorrous Thay an Trans and Calcorrous The provides of the solid and the Carce of the The strey and calcorrous the bares to man and calcorrous The strey and the strey the st		Analy o, + 25.	Anstrais Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone Anone		1440 140 140 140 140 140 140 140	51 633 72 50 72 50 72 50 74 50 74 51 60 90 60 90 74 12 74 25 74 25 7	244 244 244 244 244 244 244 244	230 31 31 31 31 31 31 31 31 31 31	22 23 24 24 24 24 25 24 25 25 25 25 25 25 25 25 25 25
	Carbon are ond inter Arithmeted Ted great and brown manpon There will be and s Privation Transpanters S. No Uniter Shale with red the sust in elevent Shale with red the sust in elevent The price and information and views of the price consumates and outes of the price inter interests and outes of the price interests out and the solution Shale with the the solution of the solution Shale with the solution of the solution Shale of the solution of the solution Shale of the solution of the solution The solution of the solution Shale of the solution of the solution of the solution Shale of the solution of the solution of the solution Shale of the solution of the solution of the solution Shale of the solution of the solut		Analy o, + 25.	Anstrains C Sign Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Another Ano		1440 140 140 140 140 140 140 140	51 633 72 50 72 50 72 50 70 19 6 19 6 19 6 19 6 19 6 19 7 12 6 19 6 19 7 12 7 12 8 10 19 19 19 19 19 19 19 19 19 19	244 244 244 244 244 244 244 244	230 31 31 31 31 31 31 31 31 31 31	22 23 24 24 24 24 24 25 24 25 25 25 25 25 25 25 25 25 25
	Carbon are on indicator Arithmeted Ted great and brown manpon There will be and s Provident Transparent prove the constant Shale with red the sust indicator Shale with red the sust indicator The great and the sust indicator Lands of manual and the sust indicator Lands of manual and the sust indicator Lands of manual and the sust indicator The sust indicator the sust indicator Lands of manual and the sust indicator The sust indicator		Analy o, + 25.	A Instruction A Inst		1440 140 140 140 140 140 140 140	43 43 2 5 2 5 2 5 2 5 2 5 2 5 2 5 2 5	244 244 244 244 244 244 244 244	31 31 31 31 31 31 31 31 31 31	22 23 24 24 24 24 24 25 24 25 25 25 25 25 25 25 25 25 25
	Carbon are on indicator Arithmeted Ted great and brown manpon Therews bands Shale with rearring throws indicator Shale with rearring throws and the soft Thin, great and thread and actes of the president for the soft brown advess of the president for the soft and the soft the president for the soft and the soft and the soft the president for the soft and t		Analy o, + 25.	A Just period A Just		1440 140 140 140 140 140 140 140	43 43 2 50 2 50	241 241 241 241 241 241 241 241	244 31 31 31 31 31 31 31 31 31 31	22 23 24 24 24 24 24 25 24 25 25 25 25 25 25 25 25 25 25
	Carbon are on indicator Arithmeted Ted great and brown manpon Therews brands Shale with rearring throws indicator Shale with rearring throws and the Shale with rearring throws and the soft The great and throws and the soft the great and throws and the soft the great and throws and and shale The symmetry gritty, ted shale That yan terms and calcerson roduling present and the soft and the soft and the soft and the Greating, and readers The symmetry and calcerson the soft and the soft and the shale soft and the soft and the shale soft and the shale soft and the soft an		Analy o, + 25.	A Justfords Control of		1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400	51 533 72 50 72 50 72 50 70 19 6 19 6 19 6 19 6 19 7 11 7 12 6 19 6 19 7 12 7 12 8 12 7 12	241 241 241 241 241 241 241 241	244 31 31 31 31 31 31 31 31 31 31	22 23 24 24 24 24 24 25 24 25 25 25 25 25 25 25 25 25 25
	Carbon are on indicator Arithmated Ted great and brown manpon Therews brands Shale with rearring throws indicator Shale with rearring throws and the soft Thin, great and thread and actions the brinn of the soft brown advess of many griess consumates and oxides of many griess consumates and oxides of many griess consumates and oxides of the brown of the soft brown advess of the brown advess of the soft brown advess the brown of the soft brown advess of the brown advess of the soft brown advess of the brown advess of the soft brown advess of the brown advess of the soft brown advess for the soft brown advess of the soft brown the brown of the soft brown the bro		Analy o, + 25.	A Just period A Just		1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400	51 533 72 50 72 50 72 50 74 50 74 51 60 70 60 70 74 11 74 12 74 12 7	241 241 241 241 241 241 241 241	244 31 31 31 31 31 31 31 31 31 31	22 23 24 24 24 24 25 24 25 25 25 25 25 25 25 25 25 25
	Carbon are on indicator Arthund to The great and brown manpon There will be and s Provident The and the set of Shale with rearring the set of the set Thin, green and hand brown as were the borner tenters, one to do set the print set of and the set of the print tenters, one of the set of the print set of the set of the set of the set of the set of the set of t		Analy o, + 25	A Just John of Con- A Just John of Con- Con- A Just John of Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con- Con		1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1440 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400 1400	51 533 72 50 72 50 72 50 70 19 4 4 51 6 00 6 00 7 11 7 12 6 00 6 00 7 12 7 12 6 00 6 00 7 12 7 12	241 241 241 241 241 241 241 241	3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	22 23 24 24 24 24 25 24 25 25 25 25 25 25 25 25 25 25

SECTION ACROSS CANGAUGUE ECHA IN LAWER CAN MINE AT MINFUL A FROM,

cale: 1 inch to 1 foot

. .

-

Tote flor ... lale, roc. er. hil. oc., vol. 4, 1915, -... 391-456.

TABLE I

-

1.

Sample	Speci- men	Lithology	Efferves- cence in cold HCl	Efferves- cence in hot HCl	Relative Mn content
4	р	green pyritiferous material	minor	moderate	very high .
l	ď	pinkish carbonate material	vigorous	moderate	very high
l	Ъ	pinkish carbonate material	vigorous	vigorous	high
2	đ	pyritiferous green cherty and red zone	moderate	vigorous	high
2	8.	pyritiferous red shale	moderate	vigorous	high
3	с	nodular red and green shale	moderate	vigorous	high
4	a	cherty material	moderate	vigorous	high
4	đ	green and red shale	minor	vigorous	high
3	ъ	red and green shale	minor	vigorous	high
3	đ	red and green shale	very minor	vigorous	moderate
2	с	green shale	very minor	minor	moderate
2	ď	cherty lenticles in red shale	very minor	minor	moderate
1.	đ	cherty material	minor	moderate	low
1	с	pyritiferous black material	minor	moderate	low
1	с	pyritiferous black material	very minor	moderate	very low
1	a	green shale	very minor	very minor	very low
1	a	green shale	very minor	very minor	trace
4	c ·	red shale	negative	negative	trace
3	a	green shale	negative	negative	trace

. . .

-----

# TABLE II.

# - Page 10 -

# TABLE III.

Sample	Speci- men	Lithology	Calcite Stain	Localization of Mn Stain
4	ď	green pyritiferous material	neg.	dissem. and streaks
2	a j	pyritiferous red shale	neg.	dissem and red làminae
3	C	nodular red and green shale	neg.	carbonate nodules
4	a	cherty carbonate material	neg.	part of carb., and part of cherty material
З	Ъ	red and green shale	neg.	dissem.
2	b	cherty lenticles in red shale	neg.	dissem. and lenticles
2	е	laminated red and green shale	neg.	red laminae
2	f	carbonate nodule	neg <sub>æ</sub>	completely stained
3	е	cherty green and red shale	neg	streaks
4	e	green shale with red laminae	neg.	neg. for Mn.
4	f	red and green shale	neg,	dissem.
2	10	red carbonate and black material	neg.	completely stained
3	10	carbonate nodule in green shale	part of nodule positive	nodule only stained

.

# PLATE I.

Manganiferous Nodular Shale.

(eb) is (right

18

- Page 11 -



A', - Before, staining.



B. - After staining.

Showing localization of manganese in the concretionary carbonate nodules, which are etched after staining. The relative density of colour in the stained specimen indicates the relative amount of manganese.

About twice natural size. P - pink carbonate G - grey carbonate W - white carbonate.

The different variaties of carbonate are, in part, indicated by differential etching.



# PLATE II.

(在京)前进行)

Carbonate Module.



A. - Before staining.



B. - After staining.

The stained specimen was completely coated with dark manganese oxide film, which was in part removed by rubbing on chemois to indicate the differential etching of the carbonates of different composition.

The unstained nodule is brown-pink in colour. -

Four times natural size.

,



- Page 13 -

The cherty lenticles in the unstained specimen show as the darker lenses. In the stained specimen the localization of manganese is indicated by the darker portion of the lenticles,

Three times natural size.

.

1

16

- Pago 14 -

# PLATE IV.

Reddish Banded Pyritiferous Shale.



A. - Before staining.



B. - After staining.

Manganese cxide stain in B is localized in two reddish bands near bottom of specimen. As in Plates II and III the disseminated manganiferous carbonates are too fine-grained to observe.

About four times natural size.

Barth unter ster bienen af en bitte et al bitter ferr a sprint en fe Bitte Berth anges ander enter taget bieter ferr a sprint

### Experimental Tests:

The experimental tests were conducted on Sample No. 4 ore.

The results of the investigation show that the ore is not amenable to flotation concentration for the recovery of manganese. The concentrates obtained contained about 30 per cent of the manganese in the ore and were low grade, analysing from 24 to 26 per cent manganese.

Desliming the pulp prior to flotation did not improve the grade of concentrate. (Test No. 6).

Calcining the ore prior to flotation treatment gave a concentrate analysing 20.24 per cent Mn; the flotation tailing assayed 9.94 per cent Mn and contained 61.9 per cent of the manganese in the ore. (Test No. 7).

Details of Tests:

# FLOTATION.

## Test No. 1.

A series of tests were carried out mainly to determine the effect of fineness of grind on the recovery of manganese.

Samples of ore were ground in water to about 75, 85 and 90 per cent minus 200 mesh, with 1.0 pound of sodium silicate per ton of ore. The pulp from each grind was transferred to a flotation cell and the manganese was floated using 2.0 pounds of sodium oleate and 0.13 pound of cresylic acid per ton of ore.

The rougher concentrates were cleaned by refloating, using 1.0 pound of sodium silicate per ton of ore.

Test	1-A,	ground	to	about	75	per	cent	minus	200	mesh.
	·l-B,	11	11	11	85	_ r	it i	tt	200	tt -
	1-C,	11	11	tt	90	t	t	11	200	11

(Continued on next page)

(Test No. 1, cont'd) -

Test:		:Weight,:	Manganese,	:	Ratio of
No.:	Product	: per :	per cent	:	concen-
:		: cent :A	nalysis:Distributi	on:	tration
1-A :	Feed Concentrate Middling Tailing	100,00 7,77 24,92 67,31	10.20 <sup>4</sup> : 100.0 20.78 15.8 13.01 31.8 7.94 52.4	*	12,87;1.
1-B: :	Feed Concentrate Middling Tailing	100.00 6.67 27.02 66.31	$ \begin{array}{c} 10.64^{\bullet}: \\ 19.95: \\ 12.26: \\ 9.04: \\ 56.4 \end{array} $	:::::::::::::::::::::::::::::::::::::::	14.99:1.
1⇔C : :	Feed Concentrate Middling Tailing	100,00 4,09 26,63 69,28	10.41 <sup>•</sup> : 100.0 20.78 : 8.2 10.81 : 27.7 9.64 : 64.1	****	24,45;1.

Results of Flotation:

Calculated values.

Screen Analysis of Flotation Tailing, Test No. 1-A.

Weight,       Manganese,         Mesh       per cent       per cent         +100       6.9       10.62         -100+200       31.3       10.62         -200       61.8       6.28	······································				
Mesh         per cent         per cent           +100         6.9         10.62           -100+200         31.3         10.62           -200         61.8         6.28		:	Weight,	;	Manganese,
+100 6.9 10.62 -100+200 : 31.3 10.62 -200 61.8 6.28	Mesh		per cent	1	per cent
	+100 -100+200 -200	:	6.9 31.3 61.8		10.62 10.62 6.28

The results of screen analysis indicate that fine grinding is necessary to lower the manganese content in the flotation tailing.

The results of the flotation tests show that the manganese content in the flotation tailing increases with the increase of fineness of grind. This is due to the fact that by increasing the fineness of grind the surface area of the pulp particles is increased; thus, a larger amount of collecting reagent will be necessary to coat the manganese minerals. Hence, when the amount of collecting reagent is constant but the fineness of grind is increased, the amount (Test No. 1, cont'd) -

of manganese minerals coated will be less and the recovery will be lower.

# Tests Nos. 2, 3, and 4.

In these tests various collecting reagents, such as "Orso," "Copacol" and oleic acid, were tried. "Copacol" showed a slightly adverse effect as a collector for manganese carbonate. When oleic acid was used the recovery of manganese was low. The recovery was about the same when "Orso" was used as that obtained with sodium oleate as collector.

# Test No. 5.

A sample of ore was ground to about 90 per cent minus 200 mesh with 1.0 pound of sodium silicate per ton of ore. The pulp was transferred to a flotation cell and the manganese was floated using 4.0 pounds of sodium oleate and 0.06 pound of cresylic acid per ton. The rougher concentrate was cleaned three times, using 1.0 pound of sodium silicate in the first and second cleaning treatments and 0.50 pound of sodium silicate per ton of ore in the third cleaning operation. Results of Flotation:

angli di ngangan di nata gina ana ana ana ana ang aga én ang ang ang ang ang ang ang ang ang an	Weight,	:	Manga	nese,	;]	Ratio of
Product :	per	:%	per	cent		concen-
	cent	:An	alysis	:Distributio	n;	tration
:		1		:	:	
Feed :	100.00	:	10,79°	: 100.0	:	
Concentrate :	14.08	:	26,08	: 34.0	:	7.10.1.
lst cleaner tailing :	29.42	:	8.41	: 22.9	:	
2nd " ":	15.86	:	11.84	: 17.4	:	
3rd " ":	6 22	:	19.39	: 11.2		
Rougher flotation tailing:	34,42	1	4,53	: 14.5	:	
<u> </u>		:		•	:	

<del>1</del>

Calculated value.

(Continued on next page)

(Test No. 5, cont'd) -

Manganese Content of Flotation Concentrates.

			Man	ganese, per cent
Rougher conc	entra	te (calculated)	<del></del>	14,07
lst cleaner	11	11	÷	18.68
2nd "	11	tr	**	24.03
3rd "	11	(analysed)	<del>u</del>	26.08

The third cleaning increased the manganese in the concentrate by 2.05 per cent only.

# Test No. 6.

On some non-metallic ores a high-grade concentrate cannot be obtained without desliming the pulp prior to flotation.

A sample of ore was ground to about 90 per cent minus 200 mesh. The ground pulp was deslimed and the deslimed product was treated by flotation, using 1.10 pound of sodium silicate, 3.55 pounds of sodium oleate and 0.07 pound of cresylic acid per ton of flotation feed. The rougher concentrate was cleaned twice, using 1.10 pound of sodium silicate per ton of rougher flotation feed in each cleaning operation.

Results of Flotation:

Product	Weight,	Mang	anese,	Ratio of
	: per	per	cent	concen-
	: cent	Analysis	Distributio	n: tration
Feed	100,00	9,97 <sup>©</sup>	100.0	9,23:1,
Concentrate	10,84	24,87	27.0	
1st cleaner tailing	19,08	8,32	15.9	
2nd " "	12,88	18,22	23.6	
Rougher flotation tailing	32,38	3,99	13.0	
Slimes	24,82	8,24	20.5	

Calculated value.

(Continued on next page)

(Test No. 6, cont'd) -

Desliming did not improve the grade of concentrate. The analysis of the concentrates was as follows:

		Per cent
Manganese (Mn) Lime (CaO), acid soluble Magnesia (MgO), " Tron (Fe)	ینید نتر ست	24.87 7.24 1.00 3.79

As the ore is practically free of calcite the CaO in the concentrate is mainly that which is in the manganocalcite.

## CALCINATION AND FLOTATION OF CALCINE.

A test was carried out to determine whether the grade of concentrate could be improved by converting the carbonates to oxides by calcination followed by flotation of the calcine.

## Test No. 7.

A sample of ore was calcined in a retort furnace under reducing atmosphere. The initial temperature of 500° F. was raised to 1600° F. and kept at that temperature for two hours.

The calcine analysed 0,25 per cent CO2.

A sample of calcine was ground to about 90 per cent minus 200 mesh with 1.0 pound of soda ash and 0.30 pound of kerosene per ton of calcine. The pulp was transferred to a flotation cell and manganese was floated, using 4.0 pounds of sodium oleate and 0.19 pound of cresylic acid per ton.

The rougher concentrate was cleaned twice by refloating. No reagents were used in the cleaning treatment.

(Continued on next page)

- Page 19 -

- Page 20 -

(Test No. 7, cont'd) -

Results	of	Flotat	lon of	Calcin	e
				1 State 1 Stat	A

Product	:Weight,	Analysis,	:Distribution:	Ratio of
	: per	per cent	: of Mn, :	concen-
	: cent	Mn : Fe	: per cent :	tration
Feed	100.00	11.72 <sup><b>*</b></sup> :	100.0	19.84:1.
Concentrate	5.04	20.24 7.30	8.7	
1st cleaner tailing	16.05	14.75	20.2	
2nd " "	5.95	18.18	9.2	
Rougher flot. tailing	72.96	9.94	61.9	

Calculated value.

Calcining the ore prior to flotation treatment did not improve the grade of the concentrate nor increase the recovery.

## CONCLUSIONS:

The results of the investigation show that the ore is not amenable to flotation concentration; the grade of concentrate is low, analysing about 25 per cent manganese, and the recovery is poor.

Microscopic examination of thin sections prepared from the ore specimens show that the mineral grains are extremely fine and the manganiferous carbonates are finely disseminated throughout the rock. Microchemical and staining methods of determination indicate that most of the manganese occurs in complex **Con**bonates that are solid solutions of MnCO<sub>3</sub> with FeCO<sub>3</sub> on one hand and with CaCO<sub>3</sub> on the other, This mode of mineral association will account for the low-grade concentrates and low recoveries obtained.

It therefore is apparent that this manganese deposit cannot be exploited by any known means of concentration short of chemical treatment.

JFK:GHB.