

TABLE I

Grain-size fractions			
boundaries (in $\mu$ )	fract- (in $\phi$ )	ion nr.	$m_\phi =$ mid- points
11,560	-3.5316	1	-3.1487
6,800	-2.7658	2	-2.3973
4,080	-2.0289	3	-1.6400
2,380	-1.2512	4	-1.0083
1,700	-0.7654	5	-0.5081
1,190	-0.2508	6	-0.0081
850	+0.2346	7	+0.4859
600	+0.7372	8	+0.9944
420	+1.2518	9	+1.4945
300	+1.7372	10	+1.9944
210	+2.2518	11	+2.4945
150	+2.7372	12	+2.9944
105	+3.2518	13	+3.4945
75	+3.7372	14	+4.0297
50	+4.3223	15	+4.6444
32	+4.9664	16	+5.4664
16	+5.9664	17	+6.4664
8	+6.9664	18	+7.9664
2	+8.9664	19	+9.9664

TABLE II

Moment measures  
(according to Friedman 1962)

1. Mean (first moment):

$$\bar{x}_\phi = \frac{1}{100} \sum f m_\phi$$

2. Standard deviation  
(second moment):

$$G_\phi = \sqrt{\frac{\sum f(m_\phi - \bar{x}_\phi)^2}{100}}$$

Degree of sorting:

<0.35 very well sorted

0.35-0.50 well sorted

0.50-0.80 moderately well sorted

0.80-1.40 moderately sorted

1.40-2.00 poorly sorted

2.00-2.60 very poorly sorted

>2.60 extremely poorly sorted

3. Skewness (third moment):

$$\alpha_{3\phi} = \frac{1}{100} G_\phi^{-3} \sum f(m_\phi - \bar{x}_\phi)^3$$

Sign of skewness:

positive = mode coarser than mean  
(fine tail)

zero = symmetry

negative = mode finer than mean  
(coarse tail)

4. Kurtosis (fourth moment):

$$\alpha_{4\phi} = \frac{1}{100} G_\phi^{-4} \sum f(m_\phi - \bar{x}_\phi)^4$$

Shape of curve:

>3 = leptokurtic (sharp)

3 = mesokurtic (normal)

<3 = platykurtic (flat)

TABLE III

Heavy-mineral weight  
percentages of the 500-50 $\mu$   
grain-size fraction

station-number	HM-%	$\bar{x}$
6	0.4	4.8
52	0.7	12
140	1.3	5.2
141	1.1	8.4
204	<0.1	440
279	3.1	44
332	1.0	51
434	0.6	63
457	1.1	4.4
588	1.1	5.0
590	0.1	3.1
592	0.2	3.9
629	1.0	4.7
631	0.3	1405
650	0.2	8.1
651	0.3	4.9
652	0.2	-u-
671	0.4	-u-
675	1.7	18
679	0.5	8.2
691	2.5	7.0
709	0.6	57
723	0.2	690
724	0.7	560
725	0.6	190
730	1.0	57
733	1.8	( > 10 mm)
735	0.8	6.4
737	0.6	-u-
739	0.1	-u-
740	0.1	1540
743	0.8	9.2
772	1.4	350
774	0.7	25
775	2.1	260
776	0.2	-u-
778	1.3	1660
783	1.0	2850
814	0.8	-u-
827	0.3	230
837	0.9	8.8
856	0.3	-u-
861	1.0	4.6
863	0.8	3.5
866	0.6	4.6
868	0.4	-u-
869	2.7	4.3
872	1.9	-u-
900	3.5	1035
906	1.8	1215
943	0.5	1550
963	1.3	295
972	1.6	2445

TABLE IV

Heavy-mineral weight  
percentages of four  
grain-size fractions

station-number	fraction	HM-%
52	1 500-300 $\mu$	0.1
	2 300-150 $\mu$	0.2
	3 150-75 $\mu$	0.7
	4 75-50 $\mu$	3.5
279	1	1.1
	2	3.6
	3	5.6
	4	10.2
332	1	0.1
	2	0.3
	3	0.6
	4	2.2
434	1	0.1
	2	0.2
	3	1.1
	4	1.4
675	1	0.1
	2	0.4
	3	1.1
	4	3.5
679	1	0.1
	2	1.0
	3	27.7
	4	11.8
776	1	1.2
	2	8.9
	3	0.1
	4	0.2
815	1	1.0
	2	8.9
	3	0.1
	4	1.4
856	1	0.3
	2	0.8
	3	13.0
	4	1.8
900	1	4.3
	2	8.5
	3	2.9

TABLE V

Chemical composition of the clay fraction  
(carbonate- and organic-C-free, dried at 140°C)

	917	915	706.1	59	605	456	901	
SiO <sub>2</sub>	45.94	44.71	46.57	52.59	48.05	50.48	47.42	%
Al <sub>2</sub> O <sub>3</sub>	26.94	23.46	25.79	23.75	25.82	24.19	25.79	
TiO <sub>2</sub>	0.93	0.84	0.75	0.64	0.61	0.62	0.64	
Fe <sub>2</sub> O <sub>3</sub> ")	7.11	10.07	8.63	7.70	8.00	8.48	8.70	
CaO	0.16	0.26	0.11	0.32	0.62	1.44	0.86	
MgO	1.46	1.72	1.58	1.54	1.49	1.91	2.33	
K <sub>2</sub> O	2.08	1.95	2.43	2.61	3.00	3.33	3.56	
P <sub>2</sub> O <sub>5</sub>	2.30	5.01	2.59	2.54	2.10	1.30	0.92	
Ign.loss (1000°C)	10.60	12.66	9.97	9.39	8.90	9.07	8.46	
	97.52	100.68	98.42	101.08	98.59	100.82	98.68	%

") All iron reported as ferric oxide.

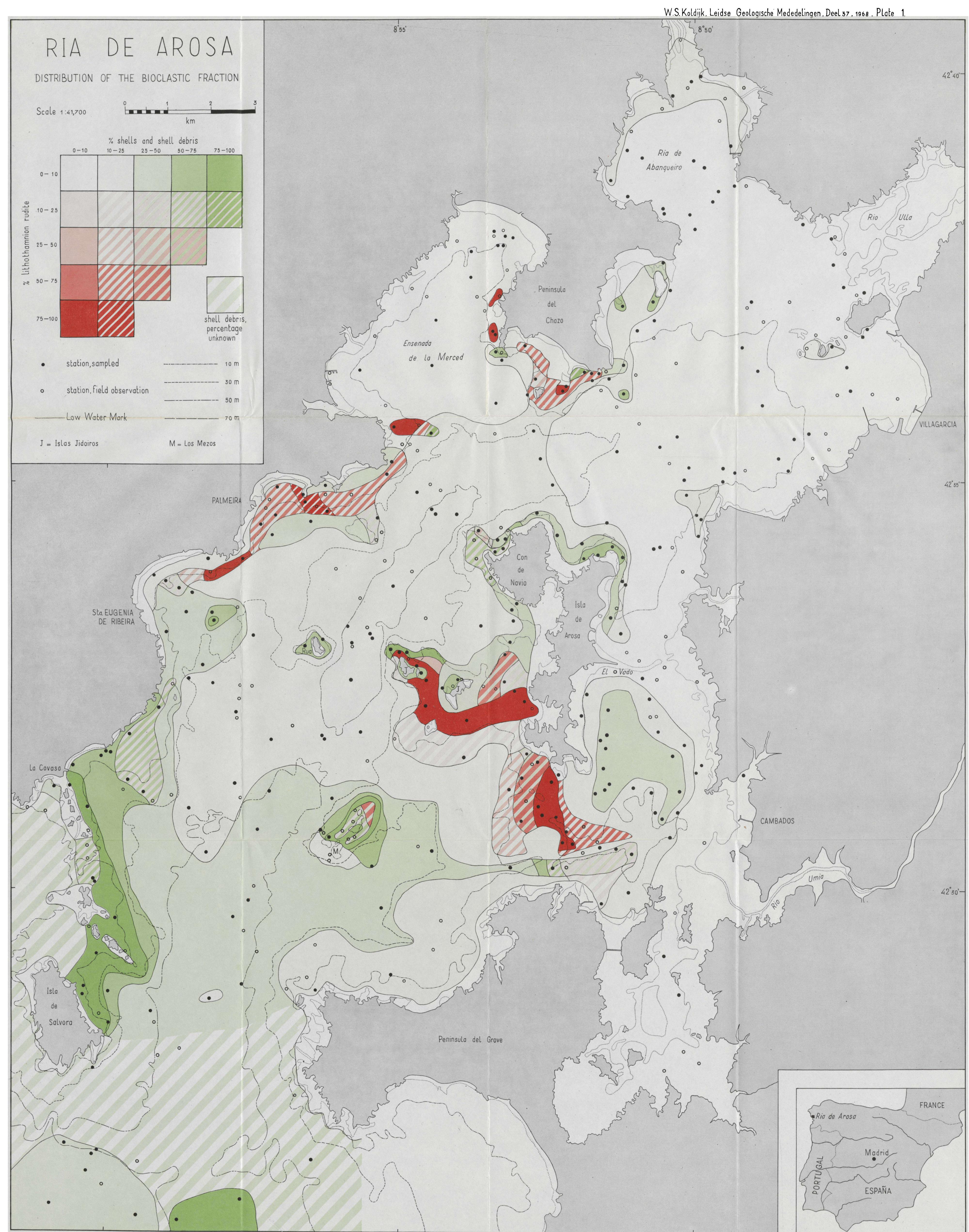
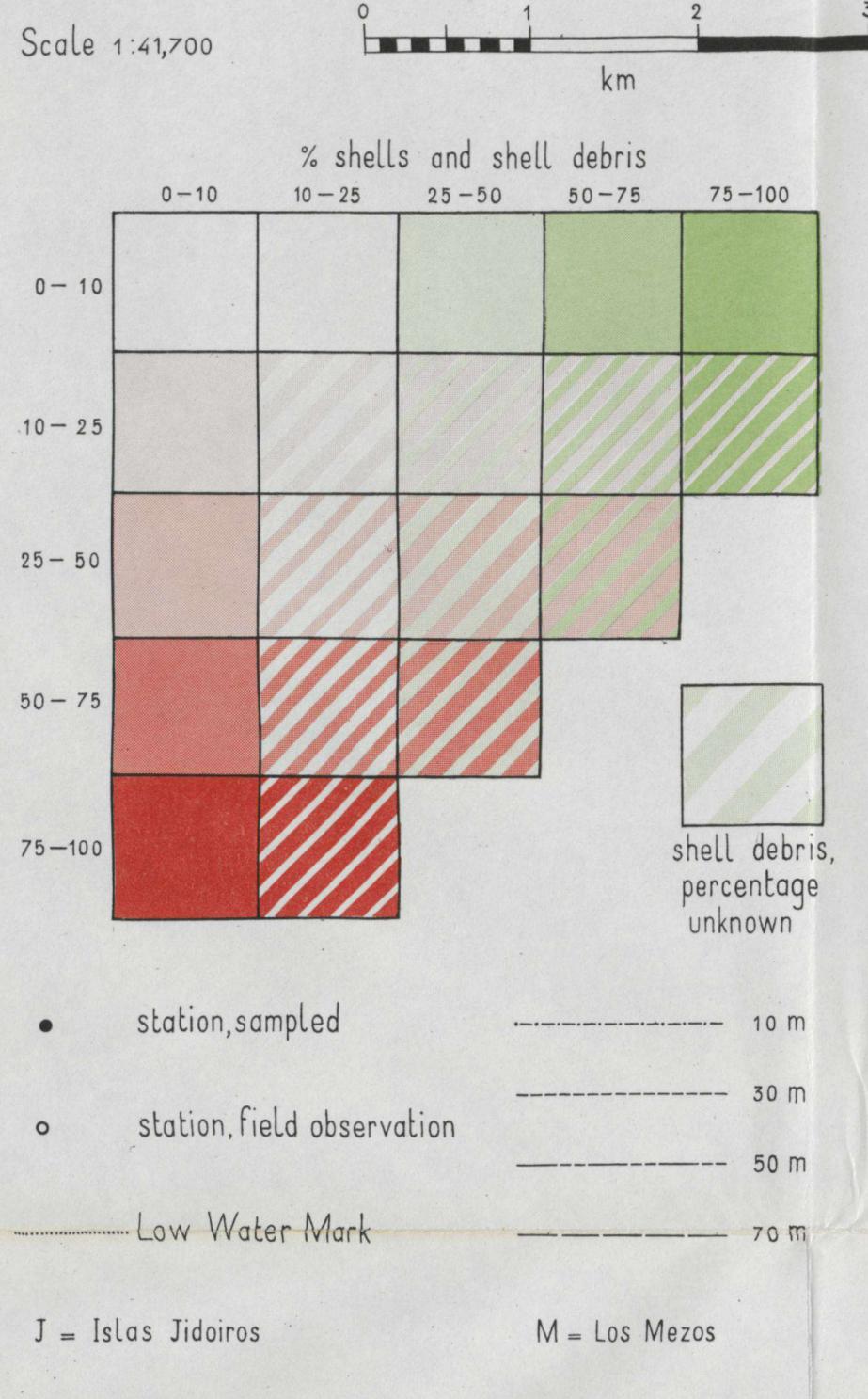
TABLE VI

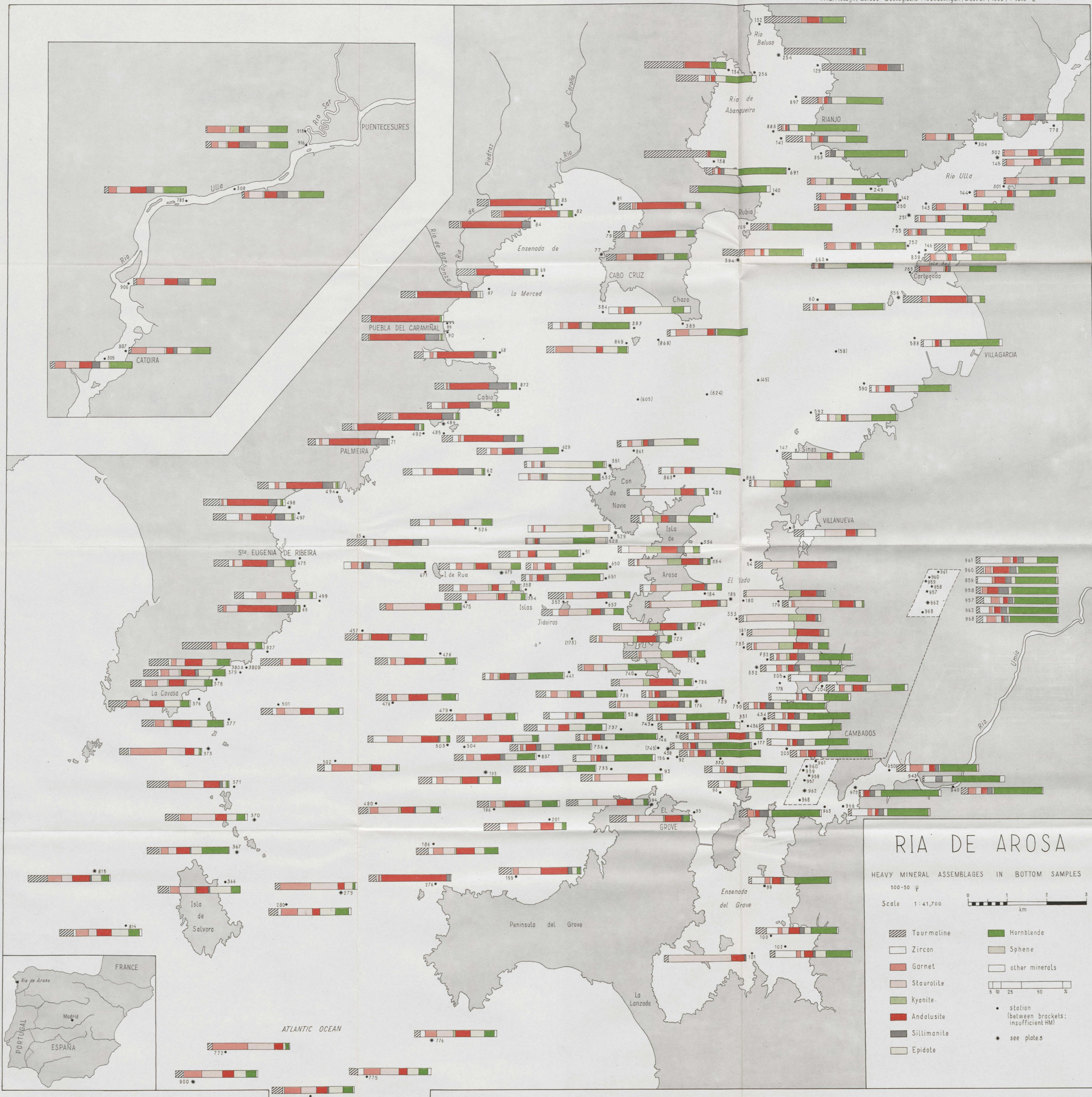
Semi-quantitative mineralogical analysis  
of the clay fraction smaller than 1 micron (X-ray photos)

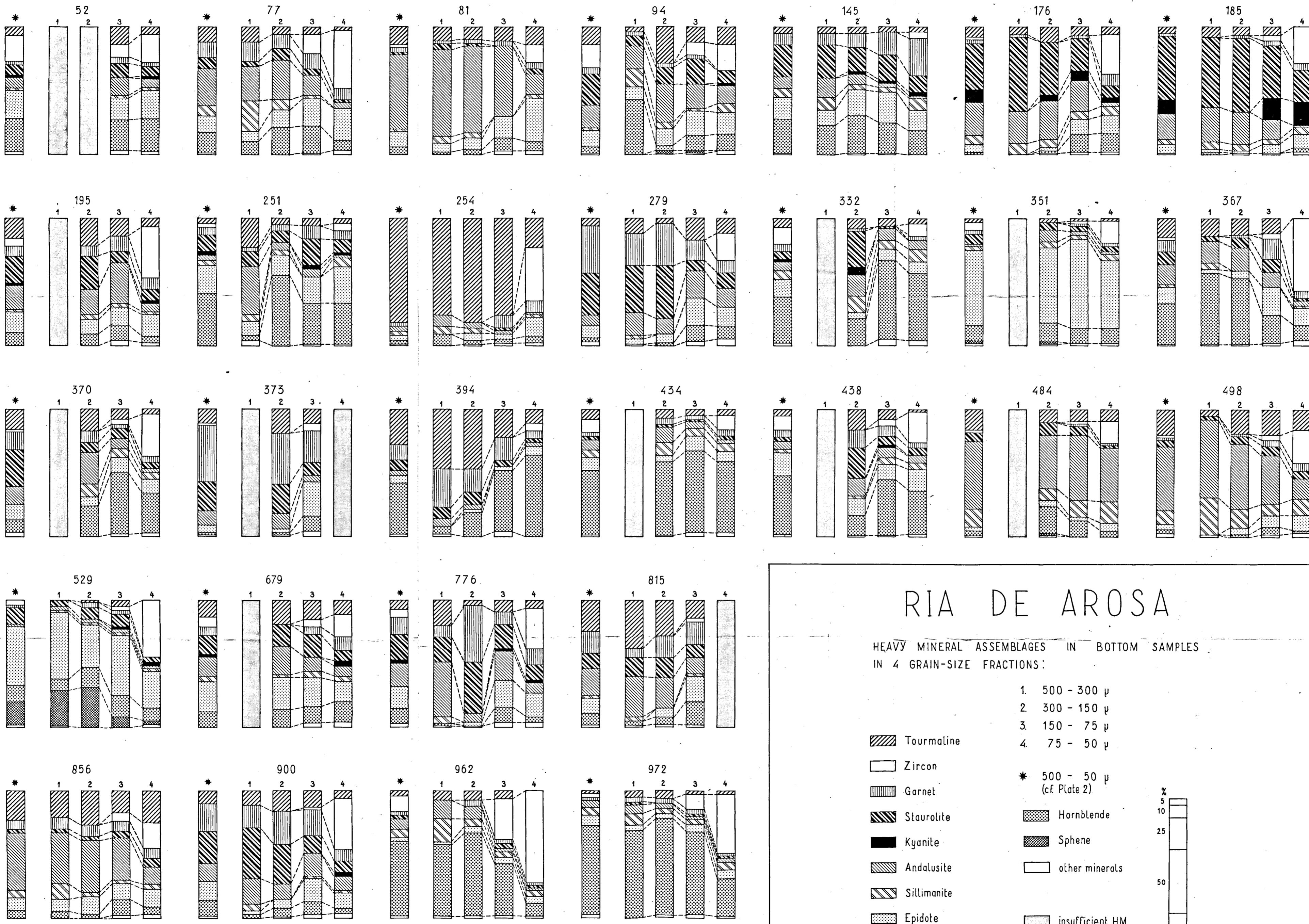
	ill	kao	chm	gib	Q	F		
7	++	+	++	:			ill = illite	
43	++	+	++	+			kao = kaolinite	
47	++	+	++	+			chm = chloritic matter	
57	++	+	++	:			gib = gibbsite	
131	++	+	:	+	+	:	Q = quartz	
145	+	AB					F = feldspar	
170	++	+	++	:	:			
192	++	+	++	:	:			
195	++	+	+		:			
200	++	+	++		:			
251	++	:	:		+	:		
307	+	AB						
381	++	+	+	+	:		AB = abundant	
502	++	+	++	+	:		++ = moderate	
525	++	+	+	+	:		+ = little	
601	++	+	++	:			:	= trace
629	++	+	++	:				
630	++	+	+	+	:			
672	++	:	++		+	:		
691	++	+	+	+	:			
709	++	+	+	+	+	:		
730	++	+	++	:	+	:		
760	++	+	+	+	+	:		
772	++		++		+	:		
863	++	+	+					
940	+	AB						
945	+	AB						
957	++	:			+	+		
964	++				:	:		
972	++	:	:	:	+	:		

## RIA DE AROSA

DISTRIBUTION OF THE BIOCLASTIC FRACTION







## RIA DE AROSA

## X-RAY DIFFRACTOGRAMS

Material: clay (<2 $\mu$ ), oriented slides.  
 Pre-treatment: H<sub>2</sub>O<sub>2</sub>, CH<sub>3</sub>.COOH.  
 Radiation: Ni-filtered Cu $\alpha$   
 Voltages: 36 - 38 - 40 KV  
 Amperages: 20 - 22 - 24 mA  
 Multiplications: 4 x 1, 8 x 1  
 Scanning speed: 1° 28 min.  
 Paper speed: 2/3 cm/min.

