

Table 2.--Location, analytical data, and calculated K-Ar ages of samples collected in the Santander massif, Santander and Norte de Santander, Colombia.

[Analysts: R. F. Marvin, H. H. Mehnert, Violet Merritt, and Roberts Wilbey] [Goldsmith and others, 1971]

[Decay constants $K^{40}: \lambda \beta = 4.72 \times 10^{-10}/\text{yr}$, $\lambda_e = 0.584 \times 10^{-10}/\text{yr}$]

[Abundance: $K^{40} = 1.22 \times 10^{-4}$ g/g K]

[Locations of samples in map area are shown on Plate 1]

Sample No.	Latitude	Longitude	Rock type formation, or intrusive body	Material analyzed	K_2O ^{1/} (wt. percent)	Radiogenic Ar ⁴⁰ (moles/gm)	Radiogenic Ar ⁴⁰ Total Ar ⁴⁰	K-Ar age (m.y.) ± 2σ
DMS-10953	8°17'N.	73°23'W.	Rhyolite porphyry, Ocaña area.	Sanidine	14.76	28.71×10^{-10}	0.95	187 ± 3
DMS-10894	7°22'N.	73°06'W.	Porphyritic granodiorite, Río Negro batholith.	Biotite	8.65	23.64×10^{-10}	0.95	177 ± 6
				Biotite	8.70	23.07×10^{-10}	0.95	172 ± 6
DMS-11547	6°48'N.	72°59'W.	Pescadero Granite, Mogotes batholith.	Biotite ^{2/}	7.02	21.04×10^{-10}	0.95	193 ± 6
DMS-13201	8°09'N.	72°54'W.	Quartz monzonite, Aguablanca batholith.	Biotite	8.60	26.22×10^{-10}	0.96	196 ± 7
DMS-10924	6°55'N.	72°56'W.	Quartz monzonite, Santa Bárbara batholith.	Biotite ^{2/}	9.16	27.29×10^{-10}	0.94	192 ± 7
DMS-11045	6°53'N.	72°54'W.	do	Biotite ^{2/}	7.40	22.29×10^{-10}	0.96	194 ± 7
DMS-13197	7°08'N.	73°03'W.	La Corcova Quartz Monzonite.	Biotite	7.18	12.06×10^{-10}	0.94	111 ± 4
				Muscovite	5.98	16.91×10^{-10}	0.86	195 ± 7
DMS-12255	7°07'N.	72°52'W.	Phyllite, Silgare Formation.	Whole rock	4.95	15.22×10^{-10}	0.92	196 ± 8
DMS-12257	8°04'N.	72°57'W.	do	Whole rock ^{3/}	6.36	21.98×10^{-10}	0.98	221 ± 8
DMS-13199	7°16'N.	72°54'W.	Biotite gneiss, Bucaramanga Gneiss.	Biotite	8.75	26.96×10^{-10}	0.96	198 ± 7
				Biotite	9.12	26.77×10^{-10}	0.98	$189 \pm 4^{1/}$
DMS-12262	8°17'N.	73°24'W.	Meta-diorite, Bucaramanga Gneiss (?).	Hornblende	0.39	2.661×10^{-10}	0.93	413 ± 30
DMS-14362	7°10'N.	72°37'W.	Pegmatite in Bucaramanga Gneiss.	Muscovite	10.12	77.32×10^{-10}	0.96	457 ± 13
				Muscovite	10.55	75.05×10^{-10}	0.96	$432 \pm 8^{3/}$
				Muscovite	9.90	72.41×10^{-10}	0.95	$439 \pm 12^{4/}$
DMS-12263	8°17'N.	73°25'W.	Hornblende gneiss, Bucaramanga Gneiss (?).	Hornblende	1.11	20.08×10^{-10}	0.99	945 ± 40

Detailed sample locations:

- DMS-10953 Rhyolite porphyry (Ocaña area), Department of Norte de Santander; planchita 76-III-D, coordinates B-3, NW, quadrangle F-12.
- DMS-10894 Porphyritic granodiorite, Río Negro batholith, Department of Santander; corestone boulder, road from Río Negro to Santa Cruz, planchita 109-II-D, coordinates F-4, quadrangle E-12.
- DMS-11547 Pescadero Granite, Department of Santander; road cut 41.7 km south of Bucaramanga, planchita 121-III-C, coordinates B-1, SW, quadrangle E-13.
- DMS-13201 Quartz monzonite, Aguablanca batholith, Department of Norte de Santander; boulder Q. Aguablanca, planchita 87-I-A, coordinates J-13, SW, quadrangle G-13.
- DMS-10924 Santa Bárbara Quartz Monzonite, Department of Santander; road cut, 550 m NW of KM 20707, planchita 121-I-C, coordinates J-5, SW, quadrangle E-13.
- DMS-11045 Santa Bárbara Quartz Monzonite, Department of Santander; road cut, Q. La Julia, planchita 121-III-A, coordinates D-11, N, quadrangle E-13.
- DMS-13197 La Corcova Quartz Monzonite, Department of Santander; quarry Bucaramanga-Fuquene highway, 3 km west of La Corcova, planchita 109-IV-D, coordinates J-8, quadrangle E-12.
- DMS-12255 Phyllite, Silgare Formation, Department of Santander; road cut, planchita 121-I-B, coordinates D-3, NW, quadrangle E-13.
- DMS-12257 Phyllite, Silgare Formation, Department of Norte de Santander; road cut, planchita 87-I-C, coordinates C-2, S, quadrangle G-12.
- DMS-13199 Biotite paragneiss, Bucaramanga Gneiss, Department of Santander; road cut Volcan Amarillo, planchita 110-III-A, coordinates G-11, SW, quadrangle E-13 (see table 1).
- DMS-12262 Meta-diorite, Department of Norte de Santander; road cut, planchita 76-III-A, coordinates J-13, NW, quadrangle F-12.
- DMS-14362 Muscovite from pegmatite in Bucaramanga Gneiss, Department of Norte de Santander; outcrop on Canada el Cardenal, planchita 110-IV-C, coordinates G-10, quadrangle E-13.
- DMS-12263 Hornblende gneiss, Bucaramanga Gneiss (?), Department of Norte de Santander; road cut, planchita 76-III-A, coordinates J-11, SE, quadrangle F-12.

^{1/} Potassium determined with a Perkin-Elmer flame photometer with a lithium internal standard. The potassium value listed is an average of two or more analyses.

^{2/} Biotite separations made by Jaime Galvis V. and Milton Manrique.

^{3/} Magnetic fraction was removed before sample was analyzed.

^{4/} Analyses by Isotopes, Inc., Westwood, N. J.

^{5/} Analysis by Geochem Laboratories, Inc., Cambridge, Mass.

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