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Preliminary Draft - Civil Affairs Handbook
on Italy, Section Six on Natural Resources

65 pp.

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Preliminary Draft

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Capt. L. H. Orenaukh

CIVIL AFFAIRS HANDBOOK

on

I T A L Y

Section Six

on

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THIS FOLDER
CONTAINS PAPERS

Military Government Division,
Office of the Provost Marshal General.

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CATALOGUE

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CIVIL AFFAIRS HANDBOOKS

TOPICAL OUTLINE

1. Geographical and Social Background
2. Government and Administration
3. Legal Affairs
4. Government Finance
5. Money and Banking
6. Natural Resources *
7. Agriculture
8. Industry and Commerce
9. Labor
10. Public Works and Utilities
11. Transportation systems
12. Communications
13. Public Health and Sanitation
14. Public Safety
15. Education
16. Public Welfare

* This study on Natural Resources in Italy was prepared for the Military Government Division of the Office of the Provost Marshal General by the Office of Strategic Services.

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on

I T A L Y

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on

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Military Government Division,
Office of the Provost Marshal General.

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INTRODUCTION

Purposes of the Civil Affairs Handbook.

International law places upon an occupying power the obligation and responsibility for establishing government and maintaining civil order in the areas occupied.

The basic purposes of civil affairs officers are thus (1) to assist the Commanding General of the combat units by quickly establishing those orderly conditions which will contribute most effectively to the conduct of military operations, (2) to reduce to a minimum the human suffering and the material damage resulting from disorder and (3) to create the conditions which will make it possible for civilian agencies to function effectively.

The preparation of Civil Affairs Handbooks is a part of the effort of the War Department to carry out this obligation as efficiently and humanely as is possible. The Handbooks do not deal with planning or policy. They are rather ready reference source books of the basic factual information needed for planning and policy making.

Revision for Final Publication.

Significant area information is immediately needed (a) for civil affairs officers charged with policy making and planning, (b) for the use of civil affairs officers-in-training and (c) to make certain that organized data is in hand, whenever events require it.

Arrangements were therefore made with the cooperating agencies to organize all immediately available material in accordance with a prepared outline. Hence, this chapter on Education in Italy should be considered as a preliminary draft only. It is being revised with special reference to the details of the structural organization for the administration of education in Italy.

COMMENTS AND CRITICISMS BY OFFICERS USING THIS MATERIAL ARE REQUESTED. THEY SHOULD BE SENT TO LT. COLONEL JAMES H. SHOEMAKER, MILITARY GOVERNMENT DIVISION, P.M.C.O., 2805 MUNITIONS BUILDING, WASHINGTON, D.C. (OR PHONE WAR DEPARTMENT EXTENSION 76370).

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NATURAL RESOURCES --ITALY

I. Introduction. Of the leading European powers, Italy is the poorest in natural resources. It is unable to meet domestic requirements for fish and lumber, and although the mineral resources are not as scarce as was once believed, Italy is self-sufficient only in sulphur, mercury, bauxite, iron pyrites, and zinc. For many important minerals and raw materials, Italy is, therefore, heavily or completely dependent upon foreign sources of supply. Its most important deficiency, in terms of tonnage and value, is coal.

To overcome these natural shortages the Fascist government has fostered a vigorous campaign of economic self-sufficiency, both by utilizing and developing natural resources to the greatest extent, and by close control of the production of raw materials. This program, while it has greatly affected the character of Italian economic life, has not succeeded in overcoming Italy's critical shortage of raw materials.

Government control over the use of natural resources is effected through the various organs of the corporate state structure: the ministries (above all the Ministry of Corporations), the National Council of Corporations, and the National Federations. Certain industries, such as salt production, are a state monopoly. In others the state maintains a large degree of control through subsidies or participation. The laws dealing with the primary resources treat natural resources as public and not as private property. The necessities of war and the loss of imports have intensified the control of the state over resources, although the means for exercising this control had been developed before the war.

In certain industries, such as fishing, small companies predominate; in the extractive industries large concerns, such as Montecatini and Ilva, dominate the scene and have close ties with the government. Government policy and industrial activity are closely united in the Italian state.

II. Fisheries

a. Government control and agencies. The fishing industry is under the control of the Ministry of Agriculture and Forests. In relation to the national corporate structure, the industry is part of the Corporazione della zootecnica e della pesca, in which are four representatives of the fishing and processing industries and one representative of the fishermen's association. There are the following national federations covering the various aspects of the industry: Federazione nazionale fascista dei commercianti della pesca; Federazione nazionale fascista degli industriali della pesca; Federazione nazionale fascista dei lavoratori della pesca.

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Government bodies supervising or assisting the industry are: (1) The Milizia nazionale forestale, which enforces laws on fishing, hatcheries, etc.; (2) The R. Commissariato italiano per la convenzione italo-elvetica per la pesca, which supervises the 1906 agreement relating to fishing in Lago Maggiore and Lago di Lugano; (3) A consultative commission and a permanent committee, which are made up of representatives of various ministries, the Corporazione, and experts, and consult with the Minister of Agriculture on problems or disputes concerning the fishing industry; (4) Local commissions for lake and river fishing and for maritime fishing, presided over by the local prefects; (5) Scientific bodies such as the Ispettorato dei servizi tecnici della pesca, R. Laboratorio centrale di idrobiologia applicata alla pesca, and the R. Comitato talassografico italiano.

The decree of October 8, 1931, no. 1604, correlated and unified all preceding laws on fish. This act covers permissible means of fishing rights, marketing, etc.

b. Policy. As in other activities, the Government fostered the expansion of the fishing industry. The law of 1931 confirmed the right of the Minister of Agriculture and forests to promote and subsidize means of increasing the industry, such as seeking for new fishing grounds and improving techniques. Since the war the fishing industry has been operating under special war regulations which prohibit night fishing and restrict the area for sea-fishing. Fishing in lakes, rivers, and coastal waters, however, has been intensified.

c. Location of fisheries and output. The Italian fishing industry is unable to supply the needs of the country, and the bulk of fish comes from waters distant from Italy. In 1938, 96,000 metric tons of fish were imported, most of it dried cod from Scandinavia.

Most of the domestic fish production is derived from waters immediately adjoining the coasts of Italy. Fishing grounds of importance before the war included the Yugoslav coastal area; the Albanian coast; the banks south of Sicily, east of Malta, and off northern Tunisia; the continental shelf waters off eastern Tunisia; Atlantic grounds off the Canaries, Cape Verde Islands; and the French and Spanish northwest African coast.

In Italian home waters a great variety of littoral fish, mollusks, and other marine invertebrates are caught within sight of shore. The major migratory species, sardine, anchovy, mackerel, and tuna, also approach the coast at certain seasons. The Adriatic, being fairly shallow, is fished more extensively than the other seas adjoining Italy.

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A great part of its area is suitable for trawling, and there are important fisheries for sardine and tuna. The Gulf of Taranto is notable for the lack of important fisheries, aside from mollusk culture in the Mare Piccolo, and a few tuna traps around Gallipoli. The coasts of Sicily and the off-lying islands on the north and west support a very active fishing industry, based largely upon sardine and tuna. In Sicily the fishing for tuna is carried on along the north coast, chiefly during May and June, during the spawning migration. As the tuna move along parallel to the shore they are taken in great numbers in large anchored traps, "tonnare". The location of these traps is seldom changed from one year to the next.

Before the war there was trawl and line-fishing of importance on the banks lying north and northeast of Pantelleria. The Bay of Naples and the Gulf of Salerno have an active but almost entirely coastal fishing industry, based on rock-and bottom-dwelling fish.

The Tuscan archipelago (Elba) is an offshore fishing area of local importance, with tuna-traps installed along the north coast of Elba. Around Livorno there is fishing on a small offshore bank; Livorno as a fishing center, however, was also dependent on landings from its deep-sea fishing fleet which worked on the Atlantic grounds. There is a minor mollusk-raising center at La Spezia. The Ligurian coast fisheries were restricted to the narrow littoral zone, with runs of migratory mackerel, sardine, and anchovy. 4174

Sardinian fisheries are centered on the west coast, along which are important tuna migrations in the shallow gulfs of Asinara and Cagliari, and in the Archipelago around Maddalena and the Strait of Bonifacio.

The lagoons of the northern Adriatic are productive in eels; especially notable is the Lagoon of Comacchio.

Fish-culture in ponds and brackish waters has had a considerable significance in north Italy. The lower Po Valley and the delta are the centers of this industry, called Vallicoltura. Carp and mullet are raised in great quantities. The Italian lakes yield large numbers of freshwater fish. Most important are Lakes Como and Garda, followed by Lake Maggiore and Lake Trasimeno.

In 1936, 110,470 people were engaged in maritime fishing and 39,909 in fresh-water fishing. The following table gives the catch for that year (not including Libya):

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	Ships	Tonnage	Catch (in quintals)		
			Fish	Mollusks	Coral and Sponge
A. Salt Water					
Shore	--	--	1,138	1,371	--
From boats	30,621	93,263	743,689	57,486	2,980
Carp and Mollusk cultivation	--	--	25,997	65,654	--
Tuna-fish traps	--	--	31,274		
Total	30,621	93,263	808,098	124,511	2,980
B. Fresh Water					
Total	30,621	93,263	858,549	124,511	2,980

(The figure of 858,549 quintals for the total catch is probably low, because of incomplete returns. The U. S. Bureau of Fisheries estimated Italian fish production for 1937 at 1,375,000 quintals)

d. Ownership and Facilities. Most of the Italian fishing companies are small. Before the war, however, there were a few large concerns with fleets operating in the Atlantic. Since the war many vessels have been taken over by the government for war use.

The fish-processing and fish-canning industries are generally on a minor scale. Important plants for tuna are on the islands of Sicily and Sardinia.

The following are lists of the most important fishing companies (capital in 1937 of L. 1,000,000 or more) and the principal canneries and processing plants.

Fishing Companies

1. Tonnare Florio. General Office: Rome, Tuna-fish traps: at Favignana and Formica (Egadi islands). Plant: Favignana. Activities: fishing, processing and sale of tuna and other fish. Capital (1936): 15,000,000 lire.

2. Sapri (Soc. Anon. Pesca e Reti Italiana). General office: Rome. Plant: Zara. Activities: fishing and net manufacture. Capital (1936): 9,800,000.

3. Compagnia generale Italiana della grande Pesca; General office: Rome
Plant: Livorno
Capital (1936): 3,500,000 lire

4. Fenicia (Soc. Anon. di Pesca): General Office: Trapani
Plant: Bonagia
Tuna-fish traps: Bonagia and Cofano
Fleet (1937): 15 sailing vessels.

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5. Peschiere di Sant'Antioco (Sardinia)
General office: Rome
Plants: Sant'Antioco, Portoscuso, Calasetta.
Activities: Processing and marketing of fish.
Capital (1936): 1,000,000 lire.

6. Regia Azienda Demaniale del Mar Piccolo
General office: Rome
Breeding grounds: Taranto and Naples
Activities: Oysters and mollusks.
Capital (1936): 1,000,000 lire.

7. Industria Pesca, S.A. (Ipsa)
General office: Genoa
Tunafish traps: Portopaglia, Peloso, and Flumentorgiu
(Sardinia)
Capital (1936): 1,000,000 lire.

8. Tonnare dell'Isole d'Elba, Ridi e Cappelli
General office: Forecece.
Tunafish traps: Portoferraio and Marciana Marina
Capital (1936): 1,000,000 lire.

III. Forests

a. Government control and agencies. Forestry is under the control of the Ministry of Agriculture and Forests. The Corporazione del legno has, among others, eight representatives of the lumbering industries, ten representatives of the various wood-working industries, four representatives of the cork industry, and four representatives for wood-workers. 4175

The following national federations serve the various aspects of the wood industry: Federazione nazionale fascista degli industriali del legno, (divided into four sections: lumbering; manufacture, excluding furniture; and cork); Federazione nazionale fascista degli artigiani; Federazione nazionale fascista delle maestranze specializzate agricole, zootecniche e forestali; Federazione nazionale fascista dei lavoratori del legno e delle industrie artistiche; and Federazione nazionale dei commercianti di legnami, mobili ed affini. Advisory bodies include: Comitato nazionale forestale; Istituzione per il miglioramento del pino; and the Consiglio nazionale delle ricerche. Sottocommissione per lo studio del legname.

The administrative body for the government is the Azienda di Stato per le foreste demaniale, which is dependent upon the Ministry of Agriculture and Forests and under the supervision of the Ministry of Finance. Its purpose is to administer State lands, and to support undertakings for the improvement of forest areas. The Milizia nazionale forestale enforces forest regulations.

Rules controlling the use of forests are set down in the decrees of 30 December 1923, r. 3267; and of 16 May, 1926, no. 1126. Both public and private forest areas are regulated with respect to cutting and clearing lands for agriculture use.

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Reforestation of denuded areas is obligatory both for communities and for private owners.

In 1923 the government owned 3.8 percent of the forest area; in 1936, of the 5,817,000 hectares of forest land, the government controlled, through the Azienda di Stato, 266,438 hectares, or about 5 percent.

b. Policy. The Italian government has followed a policy of forest conservation by purchasing forest areas and by regulating the cutting of timber and the use of forest lands. Such measures for conservation are necessary because of the shortage of Italian timber supplies and because the bulk of the forests is in mountainous areas subject to serious erosion.

c. Location of forests and output. The Italian forests cover 15 percent of the country's total area and are located mainly in the mountainous districts. The principal lumbering centers for coniferous trees are Cadore, Carnia, Trentino, Asiago, Alto Adige, Val Camonica, Valtellina, Valdassola, and Val I'Aosta; the principal centers for lumber from broad-leaf trees, whose production is scattered throughout Italy, are in central and southern Italy: The forests of Termon and Cansiglio; the forests of Abrezzo; and the forests of Calabria (Polino, Sila, and Aspromonte).

Production of lumber is not sufficient for Italy's domestic needs and was supplemented before the war by large imports principally from Yugoslavia, Austria, and the U.S.S.R.

The following table indicates the nature of the distribution of forests throughout Italy (as of 1928):

Region	Woods	Chestnut groves	Woods and Chestnut groves			
			(in thousands of hectares)	Mountains	Hills	Plains
			(in thousands of hectares)			
Piemonte	511	105	418	173	25	616
Liguria	166	86	238	14	--	252
Lombardia	348	28	257	64	55	376
Veneto	380	11	292	78	21	391
Venezia						
Tridentina	598	---	598	---	--	598
Venezia						
Giulia e						
Zara	181	---	48	132	1	181
Emilia	279	58	267	57	13	337
Toscana	776	153	376	476	77	929
Marche	98	2	91	9	--	100
Umbria	199	2	109	92	--	201
Lazio	210	12	70	113	39	222
Abruzzi e						
Molise	231	15	230	16	--	246
Campania	278	37	160	108	47	315
Puglie	66	---	---	62	4	68
Lucania	1188	6	165	24	5	194
Calabria	262	87	125	224	--	100

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Region	Woods (In thousands of hectares)	Chestnut groves (In thousands of hectares)	Woods and Chestnut groves			
			Mountains (In thousands of hectares)	Hills (In thousands of hectares)	Plains (In thousands of hectares)	total (In thousands of hectares)
Sicily	95	5	68	31	1	100
Sardinia	106	6	26	69	17	112
Northern Italy	2463	288	2118	518	115	2751
Central Italy	1283	169	646	690	116	1452
Southern Italy	1025	145	680	434	56	1170
Islands	201	11	94	100	18	212
Total	4972	613	3538	1742	306	5585

Of the total forest area 89 percent is occupied by broadleaf species; 6.9 percent by mixed broadleaf and coniferous species; and 4.1 percent by coniferous species. Common trees are the fir, spruce, pine beech, oak, cork oak, chestnut, and poplar.

The following table gives Italian work production (lumber, firewood, and charcoal) for July 1, 1939 to June 30, 1940:

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Region	Lumber (000 cu.m.)			Fuel (000 metric tons)	
	Total	Soft	Hard	Fire-wood	Charcoal
Piemonte	546	243	303	837	10
Liguria	143	83	60	165	18
Lombardia	357	271	86	532	7
Venezia Tri-					
dentina	595	509	86	199	4
Veneto	381	291	91	409	6
Venezia Giu-					
lia e Zara	256	208	49	199	12
Emilia	96	28	68	585	36
Toscana	252	103	149	423	126
Marche	10	---	10	75	14
Umbria	29	4	25	96	30
Lazio	201	6	196	204	67
Abruzzi e					
Molise	53	5	47	171	21
Campania	274	11	263	95	58
Puglie	1	---	1	26	7
Lucania	82	13	69	60	25
Calabria	638	368	269	159	62
Sicily	32	10	22	18	12
Sardinia	17	---	17	117	58
Total	3,963	2,153	1,811	4,370	573

The following table gives the production of wood in Italy by species for the year 1936-1937:

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<u>Coniferous</u>	Official figures (Thousands of cubic meters)	Estimated Production (Thousands of quintals)
Fir	1236	5994
Larch	188	1175
Pine & other	338	2030
Total	1762	9199
<u>Broadleaf</u>		
Chestnut	745	4283
Beech	372	2883
Oak	500	2852
Poplar	288	1155
Other	42	283
Total	1695	11436
<u>General total</u>	3457	20635

Italy produces a moderate amount of cork (108,684 quintals in 1938-39), a small export commodity. Other forest products include barks (24,257 quintals in 1938-39; resin (364 quintals); tanning materials (62,848 quintals); and acorns (895,631 quintals)

d. Ownership and facilities. Most of the forests of the lower hills and plains regions are private, while those of the mountains are owned by the state, communes, or other public entities or corporations. Small private ownership is the predominant form.

Saw-mills are numerous and generally small (Figures are lacking on the number of mills).

The principal lumber companies in Italy in 1937 were the following: And many of these operated in foreign countries.

1. Forestale Feltrinelli

General offices: Fiume
Mills: Talmacia (Rumania)
Forests: Talmacia.
Capital: 15,000,000

2. Forestale Triestina

General office: Trieste
Lumber yards: Rome, Trieste
Saw-mills and forests: in Yugoslavia and Austria.
Capital: 10,000,000

3. Italiana Rueping per l'Iniezione del Legno

General office: Naples
Mills: Naples
Capital: 6,250,000.

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General office: Naples
 Mills: Petittia Policastro (Catanzaro)
 Forests: In province of Catanzaro; area 8,000 hectares.
 Capital: 4,000,000

5. Bernardini A. and C. (Industria Boschiva).

General office: Rome
 Forests: Bracciano; area 300 hectares.
 Lumber yards: Velletri, Civitavecchia, Bracciano, Oriolo, Viterbo, Vetralla
 Capital: 1,500,000

6. "Bianconi-Tosi" (S. A. Italiana per Imprese ed Industrie Forestali).

General office: Arezzo
 Mills: Arezzo
 Forests: In Tuscany, Umbria, Lazio and Molise
 Capital 1,500,000

7. Carboni Italiani Vegetali ed affini, "C.I.V.A."

General office: Genoa
 Forests: Burcei and Geremeas (Cagliari); area, 2,320 hectares
 Capital: 1,375,000

8. Forestale delle Calabrie

General office: Reggio Calabria
 Mills: Rosarno, Giffane, Abeto, and Villa S. Giovanni
 Capital: 1,000,000 lire

9. Sagherificio Toscano, S. A.

General office: Genoa
 Mills: Follonica, Genoa, Rivarola, Roma
 Activities: Production of cork

IV. Mining and Quarrying.

a. General. Although there is a wide variety of minerals in Italy, their quantities, with a few exceptions, are inadequate for domestic needs. As the following table indicates, the domestic supply of only five minerals (not including quarry products) is normally adequate for Italy's domestic requirements:

<u>Mineral</u>	<u>Degree of self-sufficiency</u>
Sulphur, crude	Over 100%
Mercury ore	" 100%
Bauxite	" 100%
Iron Pyrites	" 100%
Zinc ore	" 100%
Lead ore	" 80%
Manganese ore	" 45%
Antimony	" 40%
Iron ore	" 24%
Coal	" 15%

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<u>Mineral</u>	<u>Degree of self-sufficiency</u>
Crude petroleum	Over 1%
Copper	" 1%
Nickel	" 1%
Tin	less than 1%

Percentages are based on averages for the three years 1936-38.

b. Government Control. The various extractive industries are controlled by the Ministero delle Corporazioni, and make up the Corporazione delle industrie estrattive. The latter body is presided over by the head of the government or the Minister of Corporations and has twenty-six members: 3 representatives from the fascist party, 4 for metallic mineral industries, 4 for sulphur and pyrites; 2 for the coal and oil industry; 4 for quarries (marble, granite, etc.); 2 representing stone and marble cutters; 4 representing merchants for the above products; 1 representing the engineering profession; 1 representing industrial technicians; and 1 representing the artisans.

The industrialists are organized in the Federazione nazionale fascista degli esercenti delle industrie estrattive; the workers in the Federazione nazionale fascista dei lavoratori delle industrie estrattive. In addition, there are various federations for the various mineral industries.

The following government agencies are of importance in the organization of the mining industry:

1. Consiglio superiore delle miniere. Which has consultative powers on mining concessions, the revoking of permission to mine, on the classification of works, etc. It operates closely with the Ministry of Corporations.
2. Corpo reale delle miniere. A technical administrative body, which operates under the Ministry of Corporations and directs and regulates the exploitation of mineral resources. In 1936 it absorbed the "Servizio Geologico e Minerario."
3. Ufficio prodotti minerari. Under the Ministry of Corporations, which directs the production, working, and distribution of the important minerals. This office also works with military authorities on questions concerning war materials.

The basic law governing mineral industry is that of 29 July 1927, no. 1443, consolidating and verifying the previous mining laws. The principle governing this law is that of demanialita ownership by the state of sub-soil resources (not including quarries). Mineral resources are regarded as public property and to be exploited under the direction of public authority.

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An important distinction is drawn between mines and quarries. Under mines are included: Metallic minerals; arsenic; sulphur; graphite; solid, liquid and gaseous fuels; asphalt and bituminous rocks; phosphates; alkaline salts; kaolin; bauxite; magnesite; fluor-spar; talc; asbestos; mineral and thermal waters; under ground streams and gas providing energy for industrial use. Under quarries are included: quarries, bogs etc., containing materials for building, road, hydraulic, and other construction not included in the category of mines.

Mines can be prospected and operated only with the permission of the Minister of Corporations. Ownership of land does not include ownership of the underground mineral resources, which are operated by concession. Further regulations determine the time within which operations on a concession must begin, the equipment to be used, etc. The owner of the land may be compensated for operations on his property.

Quarries and great bogs, on the other hand, remain the property of the owner of the land. The Minister of Corporations, however, has much control over the extent of these operations, and the owner is required to provide the government with data on his operations.

c. Policy. Economic self-sufficiency has long been one of the chief concerns of the Fascist administration in Italy. In the minerals field, administrative policy was directed, before 1935, toward the regulation of domestic consumption and the subsidization of producing mines, rather than toward the development of new mining ventures of uncertain value. After 1935, however, when sanctions were applied against Italy by members of the League of Nations, a new drive for autarchy was begun, and large sums were spent by the Government in intensive efforts to increase the production of all of Italy's minerals and to reduce the country's dependence upon imports to a minimum. By cutting off many former sources of supply, Italy's entrance into the present war has further emphasized the existing shortage of minerals and has given added impetus to the drive toward self-sufficiency.

d. Production. The following table gives the mineral output for Italy for 1938-39:

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PRELIMINARY DRAFTMineral Output of Italy, 1938-1939
(Footnotes: see following page)

Product	Quantity produced (1,000 metric tons)	Value of output ('000 Lire)	Number of mines and prospects under develop- ment	Number of workers employed	Net imports (-) or exports (+) (1,000 metric tons)
	1939	1938	1938	1938	1938
<u>Metallic Minerals</u>					
Zinc ore	305	201	77	10,933	+77
Lead ore	---	68	---	---	-10
Mercury ore	---	196	6	1,466	+2
Iron ore	948	990	41	3,737	-386
Bauxite	484	361	40	2,110	+75
Tin	0.3	0.2	2	1,043	-52
Manganese ore	45	48	27	1,627	-58
Sold ore	---	32	11	1,687	---
Copper	---	23	13	596	---
Arsenic	---	18	4	207	---
Nickel & Cobalt	---	13	22	511	---
Antimony	---	5	6	347	---
<u>Non-Metallic Minerals</u>					
Coal, hard	2,024	1,480	22	15,753	-11,860
Lignite	1,100	873	45	6,390	-45
Sulphur - bearing ore	---	2,364	133	12,531	+231
Iron pyrites	978	930	20	5,332	+78
Cement rock	---	2,821	160	3,955	---
Rock salt	683	614	18	1,126	+277
Boric acid & ammonium sulphate	---	7	7	634	---
Crude petroleum	12	13	275	1,204	-1,476
<u>Stone, Sand & Clay Materials</u>					
Limestone	---	8,898	1,911	11,269	---
Marble, white & colored	---	457	601	10,229	+93
Sand & gravel	---	8,775	1,570	6,595	---
Clay for bricks	---	6,752	1,351	6,595	---

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- ① - Metallic mercury
- ② - Metallic tin
- ③ - Refined sulphur
- ④ - Includes exports of marine salt
- ⑤ - Includes natural gas.

V. Non-Metallic Minerals and quarry products

a. Coal

(1). Government control. Coal is one of the extractive industries, and as such is controlled as indicated above. Official agencies concerned specifically with coal mining are:

(a). Associazione nazionale per il controllo della combustione, which deals with the prevention of accidents and with the most economic and rational use of fuel.

(b). Azienda carboni italiani (A.Ca.I.), A state controlled company with the functions of developing, prospecting, and directing the production and consumption of Italian fuel resources. It can participate in coal-mining operations, subsidize mining companies, and direct the sale of produce from such companies. The Azienda controls the two principal mining companies: Arsa and Soc. Mineraria Carbonifera Sardo.

(c). Ufficio monopolio carboni, set up for the purpose of regulating all holdings in foreign countries.

(2). Output. Italian coal resources are not large: 400-500 million metric tons of lignite; 100-200 million tons of bituminous coal; 40 million tons of anthracite; and 40 million tons of peat. Domestic production satisfies only about 15 percent of national requirement. The Italian government has sought to improve the situation by expanding in production of low-grade fuel. In 1939 Italy produced 2,024,000 metric tons of hard coal and 1,100,000 tons of lignite. Recently discovered deposits in Tuscany may have increased the production of lignite considerably since 1939.

The most important mining companies and operations are the following:

Arsa - S.A. Carbonifera
General office: Trieste
Mines: Carpano, Stermazio, Vines (Albona) in Istria
Output: (1936): 725,000 metric tons
Capital: (1936): 40,000,000.

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Societa Mineraria Carbonifera Sarda

General office: Rome
Mines: Bacu Abis, Capat Acquis, Sirai, Cortoghiana,
Piolanas in the commune of Iglesias, Gonnese, and
Serbaria. - Sardinia
Output: Bacu Abis 160,000 tons of lignite in 1936.
Sardinia as a whole produces $1\frac{1}{2}$ to 2 million tons of
hard coal per year.
Capital: (1936): 15,000,000.

Sipmer (Soc. Italo-Polacca Miniere Rybnik)

General office: Milano
Mines: In Poland
Capital: (1936): 10,000,000.

Miniere Carbonifere di Trieste

General office: Trieste
Mines: Auremio (Britof) and Zaverco-in Trieste
Output: 20-30,000 tons (estimated)

Compagnia Mineraria Veneto-Sarda

General office: Venice
Mines: Seulo (Nuoro), Perdas de foga (Sassari), Sevi
Capital: (1936): 1,000,000.

Mineraria del Valdarno

General office: Florence
Lignite mines: Carriglia (Arezzo), Figline Valdarres
(Firenze) Giovanni Valdarno (Arezzo)
Output: 450,000 tons (1936)
Capital: (1936): 22,500,000.

Societa Italiana Cave e Miniere

General office: Padua
Lignite mines: S. Giolanni Valdarno (Arezzo),
Torgiano (Perugia), Montecastrilli (Terni)
Capital: (1936): 2,500,000.

Miniere delle Carpinete

General office: Florence
Mines: Carriglia (Arezzo)
Output: (1936): 22,000 metric tons
Capital: (1936): 2,000,000.

Agricola Industriale Maremmana

General office: Florence
Mines: Campagnatico (Grosseto), Scansaro (Grosseto).
Capital: (1936): 1,000,000.

Ligniti e Derivati

General office: Siena
Mines: Castellina in Chianti (Siena)
Output: (1936): 17,165 tons
Capital: (1936): 1,500,000

Montecatini (see under Sulphur)

Lignite mine: Ribolla. (Grosseto)

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PRELIMINARY DRAFTb. Sulphur and Pyrites

(1). Government control. Sulphur is one of the extractive industries and is controlled as indicated above. The history of the government policy with respect to the sulphur industry is rather complex. In 1933-34 the Italian sulphur industry (and especially the Sicilian, which is the principal producer) suffered a severe depression because of the drop in value of the American dollar, which placed the Sicilian at a disadvantage in the export market. The old obligatory consortium of producers was dissolved in 1932; a new voluntary consortium was formed but was not very effective.

In December 1933 a Central Sulphur Sale Bureau (Ufficio per la vendita dello zolfo italiano) was set up, which handled both domestic and export sales of all crude sulphur, established production quotas, and guaranteed a minimum sales price.

The Ente Per il Miglioramento dell'Industria solfifera siciliana (reorganized in 1933) undertakes and directs activities toward improving the operation of the industry and developing new sources of supply.

The Sezione di credito minerario del Banco di Sicilia was set up in 1927 to provide long-term credit for sulphur undertakings, the renewal of plants, and other services.

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(2). Output. Italy, including Sicily, is the world's second largest producer of sulphur. In 1939 it produced 356,000 metric tons of raw sulphur, and 978,000 tons of pyrites, with a sulphur content of 454,000 tons. Most of the sulphur comes from Sicily, and the pyrites from Grosseto.

The principal sulphur and pyrites producers are the following.

Montecatini (Soc. Gen. per l'Industria Mineraria ed Agricola).
General office: Milan
Pyrites mines: Agordo (Belluno), Boccheggiano (Grosseto), Brosso-Fragne. (Aosta?), Calceranica (Trento), Mandra Principe, Montieri (Grosseto), Gorrerano-Ravi (Grosseto), Niccioleta, Ribolla (Grosseto).

Sulphur mines: Cabernardi (Ancona), Formignano (Forli), Percozzone (Persore Urbino), S. Lorenzo in Zolfinelli
Output: (1936): Iron Pyrites: 650,000 metric tons; cupreiferous pyrites, 50,000 tons; sulphur, 98,000 tons
Capital (1936): 800,000,000.

Societa Toscana Industrie Minerarie Affini
General office: Genoa
Pyrites mines: Ritorto and Farnocchia (Lucca)
Capital (1937): 5,000,000.

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PRELIMINARY DRAFTSocieta Toscana Industrie Minerarie Offini

General office: Genoa
 Pyrites mines: Ritorto and Farnocchia (Lucca)
 Capital (1937): 5,000,000.

Industrie Minerarie (Miniere zi Zolfo)

General office: Benevento
 Sulphur mines: Tufo (Avellino), Petraro (Avellino)
 Output (1936): 50,000 metric tons
 Capital (1936): 9,000,000.

Miniere di Zolfo di Marzo-Tafo

General office: Naples
 Sulphur mines: Tufo (Avellino)
 Capital (1936): 9,000,000.

Societa Solfifera Siciliana

General office: Milan
 Sulphur mines: Grottafalsa-Bosco (Enna)
 Output (1936): 20,000 metric tons
 Capital (1936): 3,200,000.

Miniera di Trabonella

General office: Caltanissetta
 Sulphur mines: Trabonella Caltanissetta
 Output (1936): 12,500 metric tons
 Capital (1936): 1,000,000.

Mineraria Irpina

General office: Benevento
 Sulphur mines: Altavilla Chianche

(3). Foreign Interest. The Union Sulphur Co. and two other American companies produced sulphur in Sicily. The Sulphur Export Corporation controlled the exports of these companies and negotiated the trade agreements with Ufficio per la vendita dello zolfo italiano.

c. Marble and other non-metallic minerals

Marble is one of the principal mineral products of Italy. The most important producing areas are Carrara, Lucca, and Verona. The Consorzio per l'industria ed il commercio dei marmi di Carrara is an obligatory consortium created to control and regulate the marble industry.

In 1936 there were 706 quarries in operation with 8,952 workers. Production for that year was as follows:

	Quantity (metric tons)	Value ('000 lire)
White marble	316,009	56,665
Colored "	113,999	14,293
Porphyry	241,455	9,252
Serpentine	59,200	533
Alabaster	3,565	997

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Rock for building and construction is an important Italian product. In 1936 there were 2,324 active quarries, with 13,101 workers, and producing stone of a total value of 60,998,000 lire.

Production was as follows:

	Quantity ('000 metric tons)
Granite	198
Syenite	9
Diorite	9
Gneiss	52
Calcareous tufa	1,078
Lava	465
Trachyte	362
Basalt	76
Volcanic tufa	1,044
Sandstone	396

In 1936, 2,339 quarries, with 10,795 workers, produced 8,845,000 tons of limestone, worth 82,285,000 lire.

The production of all types of salt - rock salt, and evaporated salt - is a monopoly of the Italian state, operated by the Azienda dei Salii. This monopoly extends to production, importation, and sale. In 1936, 58,290 metric tons of rock salt were extracted; 412,000 tons of salt obtained from natural brines; and 13,146 tons from artificial evaporation. The total value of the production of salt was 16,508,000.

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The following table gives the most important companies mining or quarrying various non-metallic minerals:

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Non-Metallic Mineral Output of Italy (1936)

Company	General office	Mines & Quarries	Product & Output	Capital (1936):
A.B.C.D. (Soc. Italiana Asfalti, Bitumi, Combustibili Liquidi e Derivati)	Rome	Ragusa	1,000,000 quintals of asphalt (1936)	L. 10,000,000
Soc. Abrazzese Miniere Asfalto	Rome	Manoppello, (Pescara), Rocca morice (Pescara)	100,000 tons of asphalt	L. 8,052,000
Talco e Grafite Val Chisone	Pinerolo	Provinces of Torino and Savona	350,000 quintals of Talc and graphite 7,000 metric tons of bituminous asbestos	L. 28,000,000 L. 3,000,000
Miniera di S. Romedio	Trento	Mollaro (Trento)	8,000 tons of quartzite	L. 2,500,000
Soc. Anon. Italiana "La quarzite"	Barge	Monte Bracco	6,000 tons of Talc	L. 2,000,000
Talco Enrico Tron & Company	Livorno	Orani (Nuoro)		
Societa General Marmi e Pietre d'Italia	Milan	Carrara, Grafagnana, Versilia, Carso, Maremma Toscana, Puglia, etc	Marble & Stone	L. 24,000,000
Societa Marmifera Italiana Henraux	Serravezza	Serravezza, Stazzeina (Lucca) Vagli Sotto (Massa)	Marble	L. 20,000,000
Lasa per L'Industria del Marmo	Lasa	Lasa (Bolzano)	Marble	L. 10,000,000
Industria die Marmi Vicentini	Chiampo	Vicenza, Verona, Brescia & Udine	Marble	L. 6,020,000
Anselm Oalling & Soci	Genoa	Carrara	Marble	L. 5,000,000
Paolo Triscarnia fu Ferdinando	Carrara	Carrara	Marble	L. 5,000,000
Cave di S. Vittore	Balsanero	Balsanero (Torino)	Marble Asbestos	L. 3,600,000

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PRELIMINARY DRAFTNon-Metallic Mineral Output of Italy (1936) (cont'd)

Company	General office	Mines & quarries	Product & Output	Capital (1936):
Thos Robson & Sons Ltd.	Firenze	Carrara, Massa, Serravezza, Camajore, Governano	Marble	L. 3,000,000 L. 3,000,000
Porfidi d'Italia Fratelli Becaglio Figli	Milan	Ora, Brenzolo & Albiano	Porphyry	
Walton Carrara-Successori	Montecatini (Ferre)	Rapolano (Siena), Monsummano (Astola), Massa	Marble	L. 2,500,000
Fratelli Giorgini	Carrara	Sagro	Marble	L. 2,500,000
Cave Marmo di Valle Strona	Massa	Massa (Carrara)	Marble	L. 2,400,000
Marmolajo (Anonima Escapazione Alabastrini della Castellina)	Milano	Valstrona (Novara)	Marble	L. 2,250,000
Dell'Amico, Caro & Colombi S. A.	Florence	Castellina Marittima	Alabaster	L. 1,800,000
La Versilia (Soc. Anon. Marmifera)	Carrara	Carrara	Marble	L. 1,600,000
Scalini Luigi	Pietrasanta	Monte Corchie Pietrasanta (Lucca)	Marble	L. 1,500,000
Soc. Anon. Pandolfini	Como	Musso (Como)	Marble	L. 1,000,000
Dalgas	Pietrasanta	Massa	Marble	L. 1,000,000
Marimifera Monte Tambura	Carra	Resceto	Marble	L. 1,000,000
Esercizio Cave e Forniture	Monselice	Monselice	Gravel & Sand	L. 1,000,000
Sabbie Industriale	Milan	Silicate sand mine at Torre del Lago; Kaolin mine Isola di Gavi (Ponza)	Industrial 103,000 tons (1936)	L. 2,000,000

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VI. Petroleum

Italy's petroleum resources are small and it produces only a small fraction of the domestic needs. The principal company is the semi-official Azienda generale Italiana petroli (A.g.I.P.), a Joint-Stock company with state participation. In 1935 its capital was 300,000,000 lire, of which 180,000,000 was subscribed by the state. This company is authorized to explore and develop petroleum wells and to refine and sell petroleum products.

The principal wells are in Emilia: in Parma, Bologna, and Piacenza. In 1936 there were 14 operating and test wells producing 161,000 quintals of oil and 13,048,000 cubic meters of natural gas.

VII. Lead and Zinc

a. Government control. Zinc and lead mining are extractive industries and, as such, are controlled as indicated above. Other government bodies which affect lead and zinc mining industries are:

1. Offizio metalli nazionali, set up in 1935, which directs, for military needs, the Italian production of lead, zinc, and silver.

2. Azienda metalli italiani, set up in 1936, which promotes the prospecting, production, and use of metallic minerals. Its authorized to participate in and subsidize mining ventures.

b. Output. In 1938 lead and zinc ore were, measured by the value of the output of Italian mines, the most important of the metallic minerals produced in Italy. The production of zinc ore was, before the present war, entirely sufficient for the country's domestic needs, while the output of lead ore was about 20 percent below domestic requirements.

Italian production, imports, and exports of lead and zinc ore (1938) (in metric tons)

	Production	Imports	Exports
Lead ore	67,493	13,809	3,334
Zinc ore	200,848	5	77,132

The principal lead and zinc mines are located in the province of Cagliari, Sardinia.

Production of lead and zinc ore in Italy, by provinces in 1937, is as follows:

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Province	Mines	Number of Prospects under Development	Total	Quantity Produced (met. tons)	Value of Output ('000L)	No. of Workers Employed
Cagliari	44	12	56	180,251	107,492	7,694
Udine	1	--	1	36,913	16,753	762
Sassari	1	--	1	9,814	8,108	298
Bergamo	9	--	9	13,688	7,575	800
Bolzano	2	--	--	?	36	?
Total	57	12	67	240,666	139,964	9,554

The Monteponi and San Giovanni mines, in the Iglesias district (Cagliari) produce largely zinc ore, whereas the Montevecchio and the Incurtosu mines in the Arbus area of the same province, have a greater lead output. The Montevecchio mine, owned in equal shares by the Montecatini concern and the Monteponi company, has accounted for about 40 percent of the entire lead production in Italy. On the mainland the Raibl mine, in the province of Udine, is the largest producer of both lead and zinc ore. Small quantities of both ores are also mined at Val Seriana (Bergamo)

It is estimated that at the present (Pre-war) rate of consumption, Italy's lead-zinc ores will be adequate for about 50 years.

The principal firms engaged in mining lead and zinc are as follows:

Montecatini (see under Sulphur & Pyrites)
Zinc, Lead, and Copper mines: Accesa, Caparre Vecchie, Fenice Massetana
Output (1936): Zinc ore, 5,000 metric tons; lead, 500 tons.

Societa Mineraria e Metallurgica di Pertusola
General office: Genoa
Lead and zinc mines: Gennamari, Incurtosu (Cagliari)
Output (1936): Metallic lead, 15,211 metric tons; electrolytic zinc, 13,050 metric tons
Capital (1936): L 96,900,000

Societa di Monteponi
General office: Turin
Mines: near Iglesias (Cagliari)
Output (1936): lead ore, 9,319 metric tons; Metallic zinc, 13,331 metric tons
Capital (1936): L 44,000,000

Societa Anonima Minerara "Montevecchio"
General office: Milan
Mines: Montevecchio (Cagliari)
Output: lead ore, 15,000 metric tons; zinc ore, 4,800 metric tons
Capital (1936): L 25,000,000

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PRELIMINARY DRAFTMiniera Cave di Predil (Raibl)

General office: Rome
 Mines (lead & zinc): Cave del Predil (Udine)
 Output (1936): 46,000 metric tons, lead and zinc ore
 Capital: (1936): L 4,794,500

Miniere Rosas

General office: Rome
 Mines: Rosas (Cagliari), Genna (Cagliari), Mitza, Sermentus, Begatrola, Marchesa
 Output (1936): lead ore, 1,000 tons; zinc, 2,000 tons
 Capital (1936): L 4,644,000

Miniere di Malfidano

General office: Genoa
 Mines: (lead & zinc); Fluminimaggiore (Cagliari), Iglesias (Cagliari), Gonnesa (Cagliari)
 Capital: L 4,320,000

Miniere di Narcao

General office: Milan
 Mines (lead & zinc): Narcao (Cagliari)
 Capital (1936): L 2,750,000

Societa delle Miniere di Lanusei

General office: Genoa
 Mines (Lead, Zinc & Silver): Iglesias area (Cagliari)
 Output (1936): Zinc ore, 5,000 metric tons; lead ore, 200 tons.

VIII. Mercury Orea. Government control (See Lead & Zinc)

b. Output. Because of war conditions in Spain, normally the world's largest supplier, Italy led all other countries in the production of mercury ore from 1937 to 1939. Italy's mercury resources greatly exceed its ordinary domestic requirements, and its annual production was, therefore, dependent to a large extent upon the conditions of the world market. No exports of unprocessed mercury ore were made.

Production of mercury ore in Italy for 1937, by provinces, was as follows:

Province	Mines	Number of Prospects Under Development	Total	Quantity Produced (met. tons)	Value of Output ('000 L)	No. of Workers Employed
Siena	3	--	3	131,458	54,292	744
Gorizia	1	--	1	44,548	7,858	520
Grosseto	1	1	2	7,609	505	144
Total	5	1	6	183,615	62,655	1,408

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The Societa Mineraria Monte Amiata, with mines in Siena, was believed to have accounted for about 55 percent of the total Italian production in 1939. Its deposits are erratic and generally of low-grade ore.

The government-owned Idria mines, in Gorizia, accounted for most of the remainder of production. The average grade of ore in those mines is low, but the reserves are reported to be large.

Italy's chief producers of mercury are associated with those of Spain in an international cartel. Exports are allocated and sales are made through a single agency. In 1941, 45 percent of the exports were reported allocated to Italy, and 55 percent to Spain.

The principal mercury mining firms (not including the government-owned mines at Idria) are as follows:

Societa Anonima Mineraria, Monte Amiata
General office: Rome
Mines: Abbadia S. Salvatore (Siena)
Output (1936): 7,600 quintals of metallic mercury
Capital (1936): L 17,010,000

Stabilimento Mineraria del Siele
General office: Livorno
Mines: Piancastagnaio (Siena)
Capital (1936): L 25,344,000

Mineraria Argus
General office: Milan
Mines: Piancastagnaio (Siena)
Output (1936): 119 metric tons of metallic mercury
Capital (1936): L 4,800,000

Societa Italiana Anonima Mercurio
General office: Rome
Mines: Scansaro (Grosseto)
Capital (1936): L 2,600,000

IX. Iron

a. Government control. Iron mining is one of the extractive industries and, as such, is controlled as indicated above.

Some of the government agencies having special application to the iron industry are:

1. Corporazione delle metallurgia e delle meccanica, of whose 87 numbers, 8 represent the iron-working industries.

2. Consorzio nazionale approvvigionamenti materie prime siderurgiche (Capsider) - which is largely concerned with obtaining scrap metal.

The government took an active hand in encouraging iron-mining, and granted very favorable concessions to the principal companies, notably Societa Ilva, in the 1930's.

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b. Output. The production of Italian iron ore, which averages about one-half of one percent of the world output, is insufficient for the requirements of the Italian iron and steel industry. In line with its policy of economic self-sufficiency, the Fascist government has made strenuous efforts to increase Italy's production of iron ore; even the almost inaccessible Cogne mines in the Italian Alps, at an altitude of 8,000 feet, have been worked increasingly in recent years. In 1938 Italy produced 990,043 metric tons of iron ore, imported 385,792 tons, and exported 161 tons.

The principal iron mines are on the island of Elba; the second in importance is in the province of Aosta, in Val d'Aosta and Val d'Ayas. The Nuoro area in Sardinia has iron deposits of high phosphorus contents.

The following table gives the production of iron ore in Italy for 1937, by provinces.

Province	Mines	Number of Prospects under Development	Total	Quantity produced (Metric tons)	Value of output ('000 L)	Number of workers employed
Livorno	7	--	7	596,362	33,571	903
Aosta	2	--	2	202,437	16,195	883
Sassari	3	--	3	94,720	6,223	408
Grosseto	3	--	3	60,927	2,317	358
Bergamo	7	--	7	13,960	1,210	243
Brescia	2	--	2	11,504	1,188	176
Cagliari	1	--	1	4,000	330	63
Genova	1	--	1	12,450	311	59
Nuoro	--	1	1	1,000	85	22
Vicenza	--	1	1	145	15	6
Vercelli	--	1	1	200	14	10
Total	26	3	26	997,705	61,459	3,131

The following are the principal firms engaged in mining iron ore:

Societa Anonima Nazionale Cogne
General office: Turin
Mines: Cogne (Aosta)
Capital (1936): L 180,000,000

ILVA-Alti Forni e Acciaierie d'Italia
General office: Genoa
Mines: (some of which are lead mines) Gambatesa (Campobasso) Cerchiara, Monte Argentario (Grosseto), Isola, d'Elba (Livorno), Valdaspra (Aosta), Nurra (Nuoro?), Perda Niedda, Gruppo Val Seriana, Gruppo Val di Scalve, Gruppo Val Allione
Capital (1936): L 536,000,000.

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PRELIMINARY DRAFTX. Bauxitea. Government control (see Lead & Zinc)

b. Output. Italy's relatively ample supplies of bauxite constitute one of the few exceptions to the country's general poverty in primary raw materials.

Italian production accounts for about 10 percent of the world's output of bauxite, an amount more than sufficient for Italy's own needs. In 1938 Italy produced 360,837 metric tons of bauxite, of which 75,386 tons were exported.

Practically all of Italy's output is mined in the province of Pola, in Istria. Production of bauxite, by provinces, for 1937 is as follows:

Province	Mines	Number of Prospects Under Development	Total	Quantity produced (Metric tons)	Value of output ('000L)	Number of workers employed
Pola	27	13	40	383,493	19,175	1,969
Foggia	--	2	2	1,372	49	123
Benevento	--	1	1	1,100	39	19
Bari	--	1	1	400	14	7
Gorizia	1	--	1	100	11	15
Lecce	--	1	1	30	1	10
Total	28	18	46	386,495	19,289	2,143

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The principal firms engaged in mining bauxite are the following:

SAMT, Societa Anonima Mineraria Triestina

General office: Trieste

Mines: in Istria (Pola)

Output (1936): 200,000 metric tons of bauxite

Capital (1936): L 4,000,000

Societa Italiana per le Industrie Minerarie e Chimiche

General office: Genoa

Mines (alluminate): Allumiere (Roma), Tolfa (Roma), Montioni (Livorno)

Capital (1936): L 2,000,000

Societa Anonima per l'Escavo ed l'Industria di Minerali d'Alluminio

General office: Trieste

Mines: S. Domenico di Albona (Pola), Portole (Pola), Matterada (Pola), Zaccagnini, Cherso (Pola)

Output (1936): 60,000 metric tons

Bauxiti Istriane Soc. a.g.l.

General office: Trieste

Mines: in Pola

Capital (1936): L 1,000,000

Industrie Minerarie ed Elettrochimiche

General office: Venice

Mines: Lecce ne' Marsi (Aquila)

Capital (1936): L 5,000,000

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PRELIMINARY DRAFTXI. Tina. Government control (see Lead & Zinc)

b. Output. Italy's production of tin ore, which amount to only about one-tenth of one percent of the world production, provides only some 6 percent of Italy's tin requirements. The average annual output is from 200 to 300 metric tons of metallic tin.

There are only two tin mines in Italy: one in the province of Livorno and one in the island of Sardinia. Reserves of 50,000 tons of ore, averaging 2 percent tin content, are estimated to exist in the Sardinian mine.

The two principal firms are:

Stagno Italiano di Monte Valerio
General office: Rome
Mines: Monte Valerio (Livorno)
Output (1936): 60 metric tons of metal
Capital (1936): L 3,000,000

Societa Montemanna
Mines: Villacidro (Cagliari)

XII. Manganese and Ferromanganesea. Government control (see Lead & Zinc)

b. Output. In keeping with its program of autarchy, Italy expanded the output of its deposits of manganese ore, until domestic production averaged, before the present war, about 50 percent of the country's requirements. In 1938 Italy produced 63,962 metric tons and imported another 58,079 metric tons.

Output of manganese ore, by province, for 1937 is as follows:

Province	Mines	Number of Prospects Under Development	Total Prospects	Quantity Produced (Metric tons)	Value of output ('000L)	Number of workers employed
Genova	2	1	3	17,390	2,000	2,295
La Spezia	1	-	1	3,420	581	91
Cosenza	1	3	4	2,772	444	167
Campobasso	-	9	9	2,486	398	168
Pisa	-	1	1	4,094	368	112
Cagliari	1	5	6	1,412	282	368
Trapani	1	-	1	80	32	12
Sassari	-	3	3	68	31	33
Nuoro	-	1	1	26	9	29
Siena	3	-	3	100	6	8
Total	9	23	32	31,932	4,158	3,203

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PRELIMINARY DRAFT

Output of ferro manganese ore by provinces in 1937
is as follows:

Province	Mines	Number of Prospects Under Development	Total	Quantity produced (Metric tons)	Value of output ('000L)	Number of workers employed
Grosseto	1	-	1	17,420	1,393	137
Udine	-	1	1	995	50	49
Pesaro	-	1	1	50	6	5
Total	1	2	3	18,465	1,449	185

Principal firms engaged in mining manganese ore are
the following:

Societa ILVA
General office: Genoa
Mines: Tre Monti Gambatesa (Genoa)

Azienda Metalli Minerali Italiani (AMMI)
(Government owned)
Mines: Cagliari.

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XIII. Other Mineral Resources

a. Gold. A small amount of gold is produced in northern Piedmont, mainly at Pestarena, Monte Lareto, Domodossola, and Crodo. Italy's total gold production, however, amounts to less than one-tenth of one percent of the total world output. In 1937, 17,365 metric tons of gold ore were mined, in the province of Novara.

b. Copper. Italian production of copper ore is insignificant from a world standpoint and ordinarily provides less than 3 percent of Italy's domestic requirements. Even before the present war Italy had tried to reduce its dependence upon copper by copper salvage campaigns and by the substitution of aluminum for copper whenever possible. About one-half of Italy's copper output is from Cagliari, Sardinia. Other producing areas are Casarza and Libiola (Genoa) and Massa Marittima (Grosseto).

Production of copper ore, by province, in 1937, is
as follows:

Province	Mines	Number of Prospects Under Development	Total	Quantity produced (Metric tons)	Value of output ('000L)	Number of workers employed
Cagliari	1	-	1	2,219	629	162
Genova	?	-	?	740	318	?
Grosseto	1	-	1	116	232	12
Parma	-	1	1	500	60	46
Sassari	?	-	?	200	40	?
Bolzano	1	-	1	2	13	2
Nuoro	-	2	2	17	8	69
Modena	-	1	1	25	3	9
Firenze	-	1	1	1	3	17
Total	3	5	8	3,820	1,306	317

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PRELIMINARY DRAFT

c. Arsenic. Italy produces about 1 percent of the world output of arsenic. Practically all of the arsenic is produced in the province of Novara, which in 1937 put out 15,890 metric tons of ore, valued at L. 2,064,000, and employing 135 workers. Some arsenic is produced at Villasalto in Cagliari. The principal producing firm is the Anonima Stabilimenti di Rumianca, with a general office at Turin.

d. Nickel. The attempt to increase domestic output of nickel has had poor results, and Italy was, before the war, almost entirely dependent upon imports.

The most promising Italian deposits are said to be located in Piedmont, not far from Italian - Swiss frontier, in the valleys of Sesia and Strona. Small quantities exist in Sardinia, at Fenaga Sibirì.

Production of nickel and cobalt ores, by province, in 1937 was as follows:

		Number of Prospects Under Development	Total Mines	Quantity produced (Metric tons)	Value of output ('000L)	Number of workers employed
Province						
Vercelli	-	7	7	7,069	954	198
Novara	2	3	5	76	103	39
Cagliari	-	3	3	62	93	254
Total	2	13	15	7,891	1,150	511

The Societa Anonima Nichelio e Metalli Rari, with headquarters at Rome, and a capital of L. 10,000,000, is the principal developer of Italy's nickel ore reserves, although the Montecatini company is also said to be interested in this metal.

e. Antimony. Italy produces about 1 percent of the world's output of antimony, and satisfied about one-third of the country's domestic requirements.

Practically all of the Italian antimony is produced in Sardinia, most of it near Villasalto (Cagliari). In 1937 the province of Cagliari produced 3,276 metric tons of antimony ore, valued at L. 1,482,000, and employed 261 workers in the mines.

The principal firm producing antimony ore is the Societa anonima Miniera e Fonderia d'Antimonio, with headquarters in Rome. This firm has a capital of L. 3,000,000, and conducts mining operations at Susuergia, Corti Rosas, and Martalai (Cagliari).

f. Magnesium. Magnesium production was insignificant before the present war, but recent discoveries of extensive deposits of magnesite in the Dolomite mountains in northern Italy may have expanded magnesium production considerably. (The Italians had hopes of producing 6,000 tons of magnesium per annum by 1941).

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PRELIMINARY DRAFT

The firms concerned with this new venture are;

The Societa Anonima Italiana per il Magnesio e le
Leghe di Magnesio and the Societa Anonima Magnesio Ita-
liana Salcis (SAMIS), and the Montecatini concern.

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Preliminary Draft

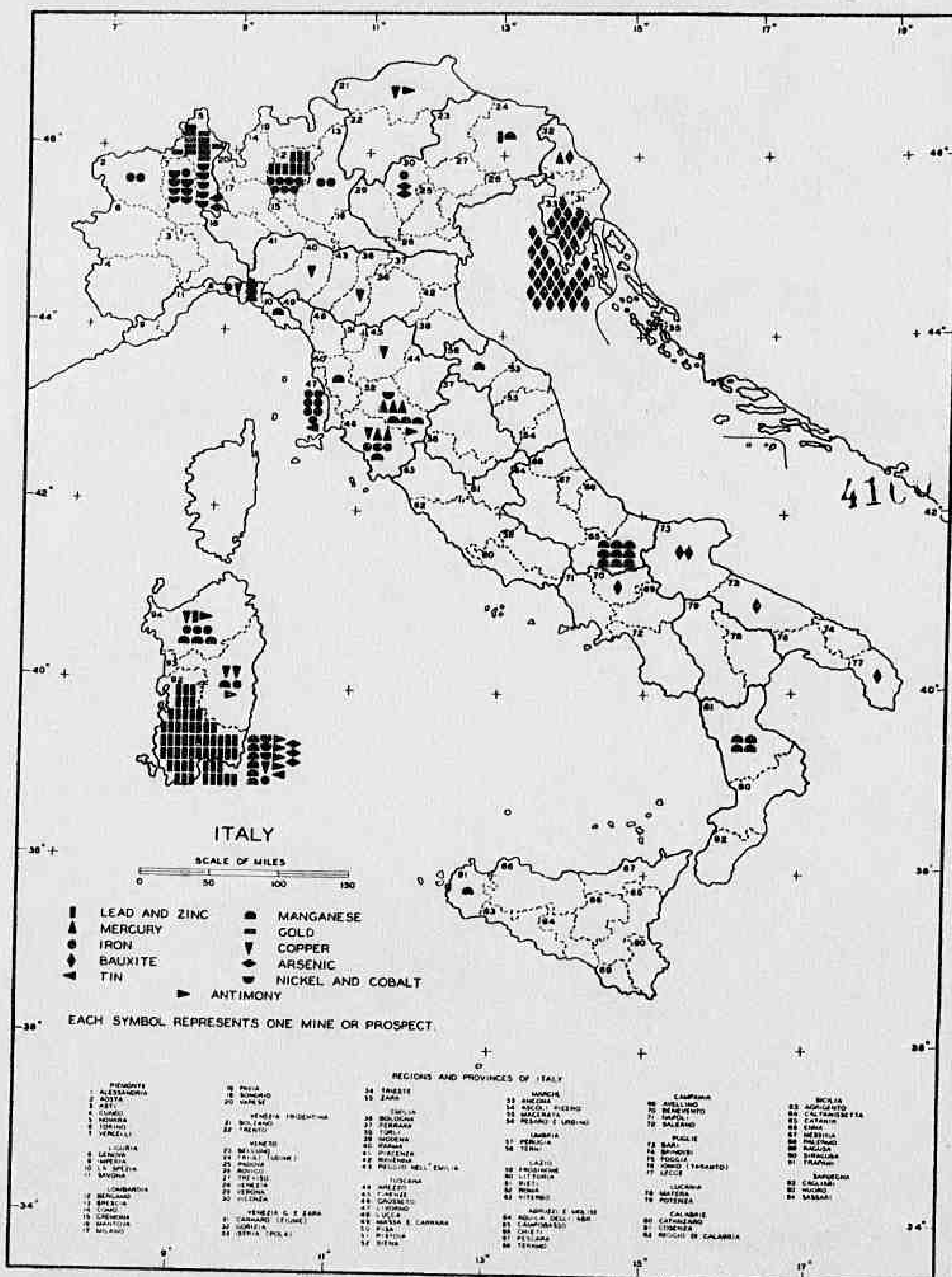
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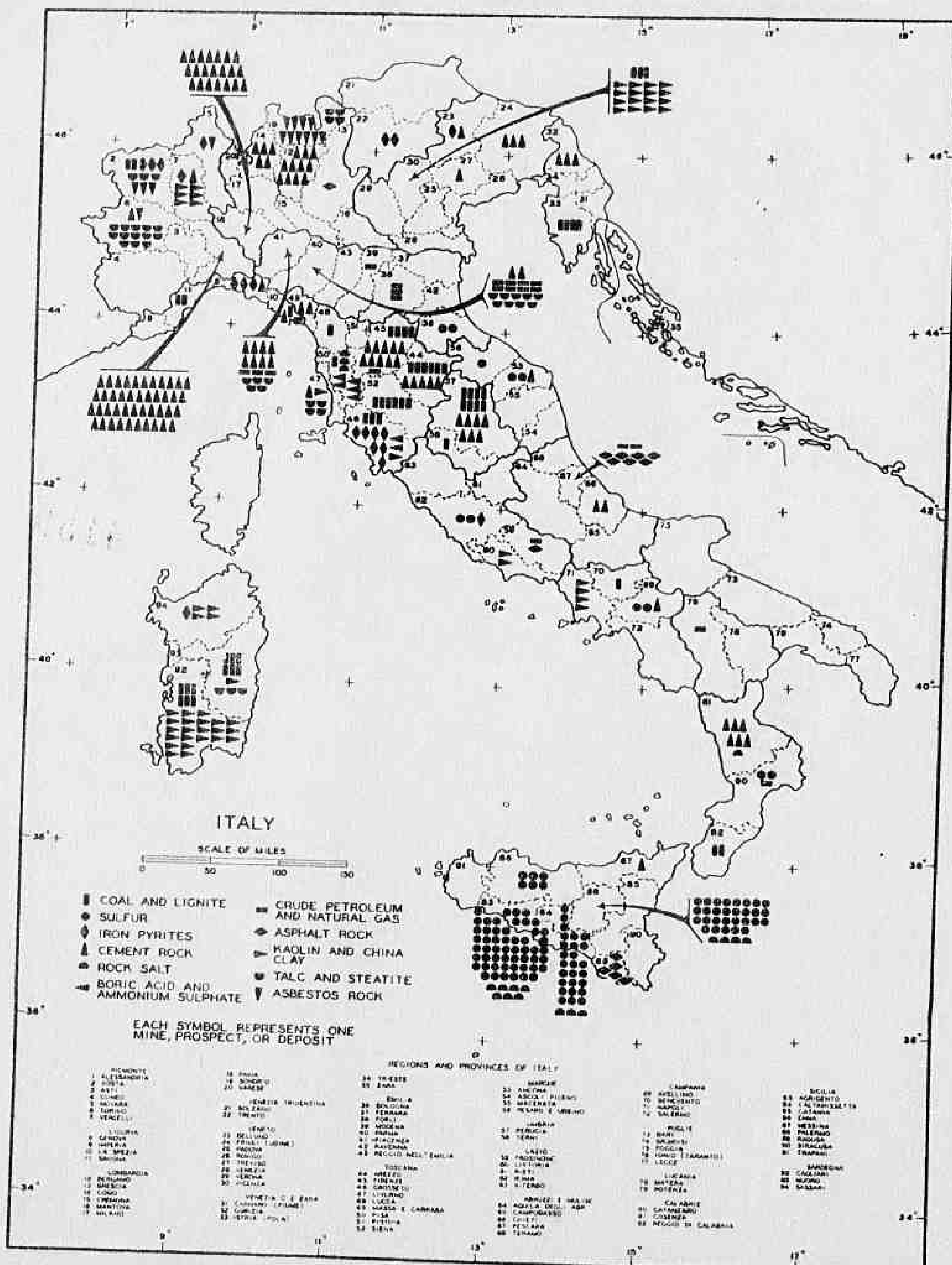
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DISTRIBUTION OF METALLIC MINERALS, BY PROVINCE



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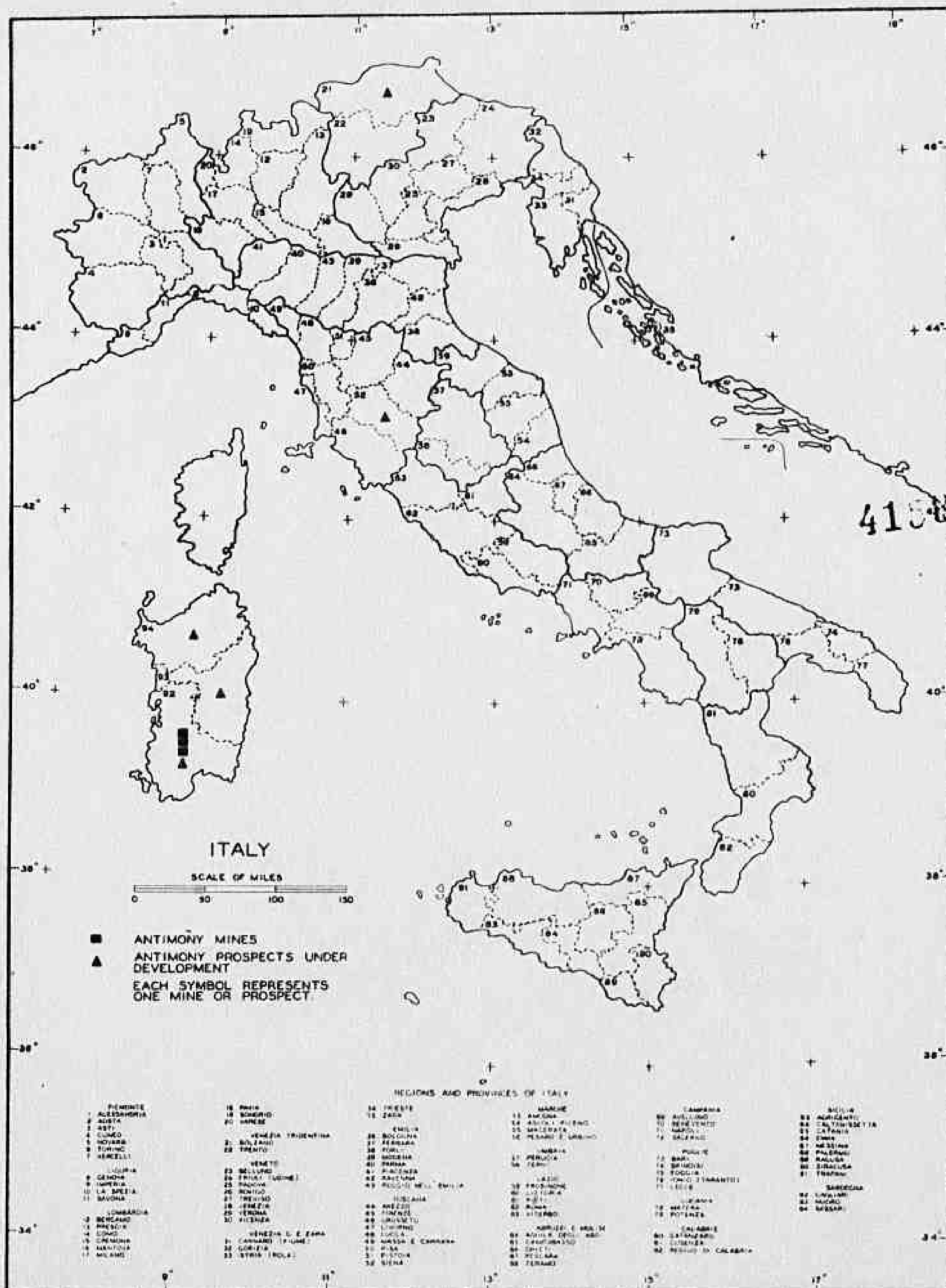
DISTRIBUTION OF NONMETALLIC MINERALS, BY PROVINCE



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ANTIMONY MINES, BY PROVINCE

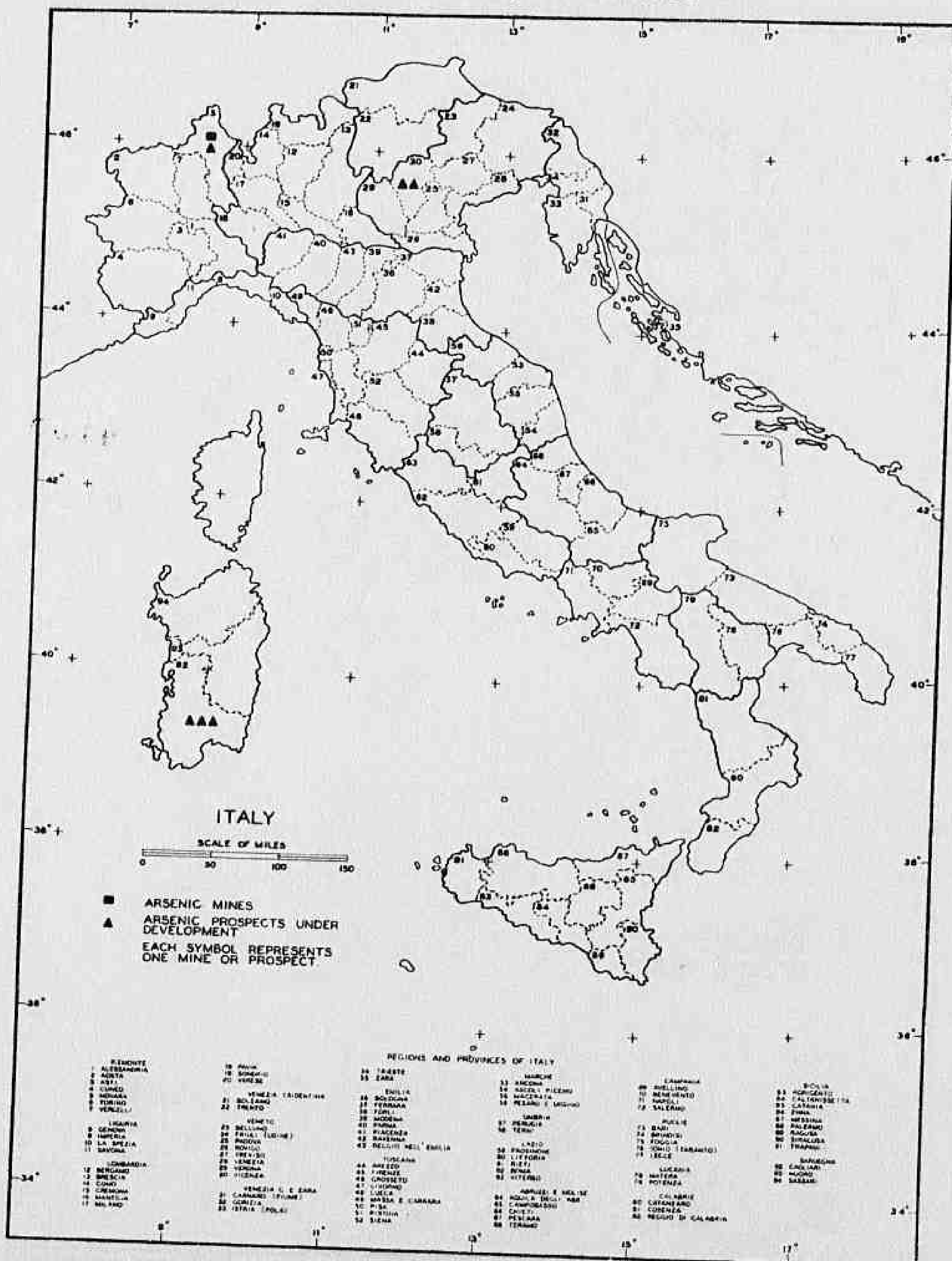


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ARSENIC MINES, BY PROVINCE

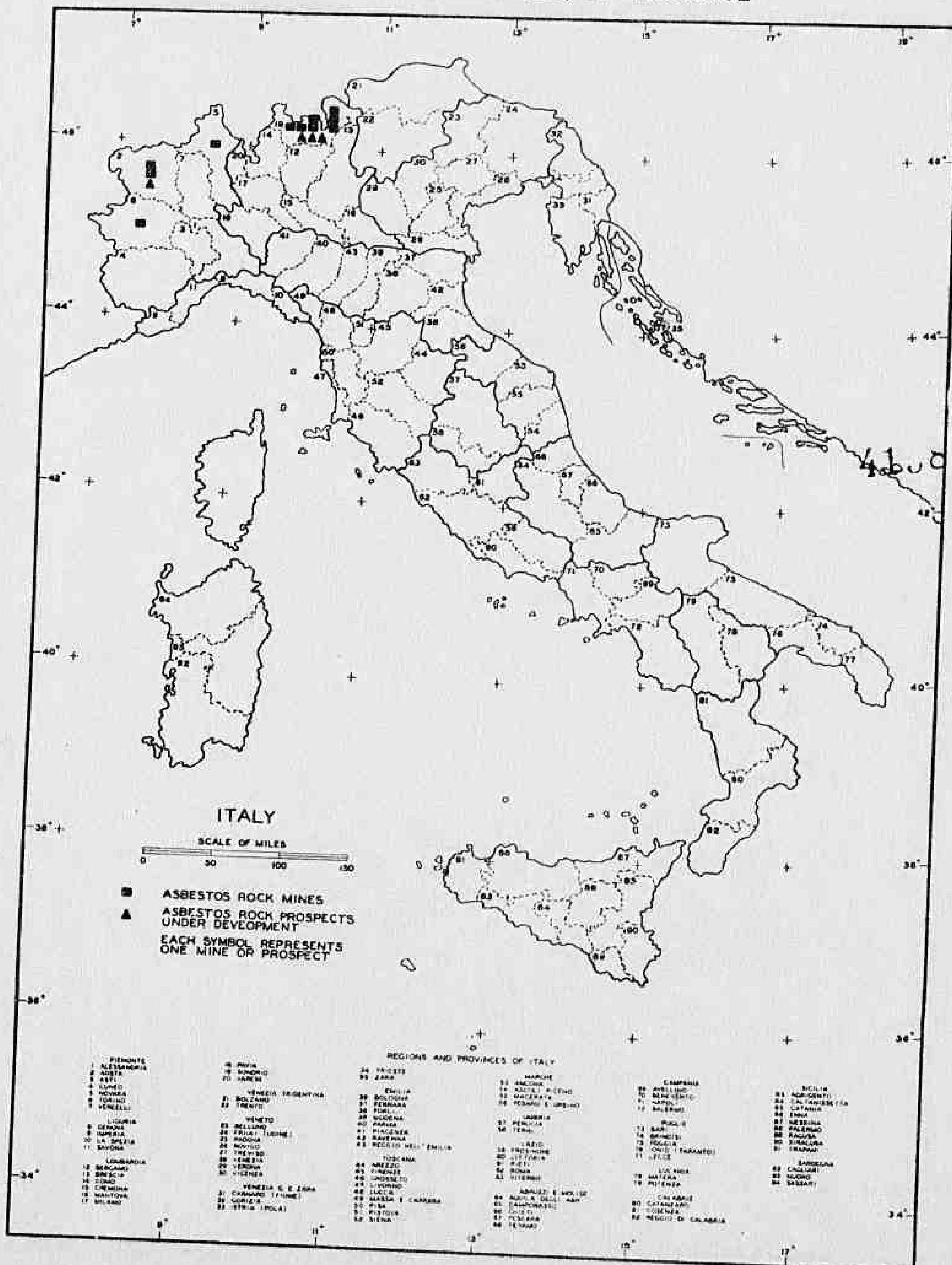


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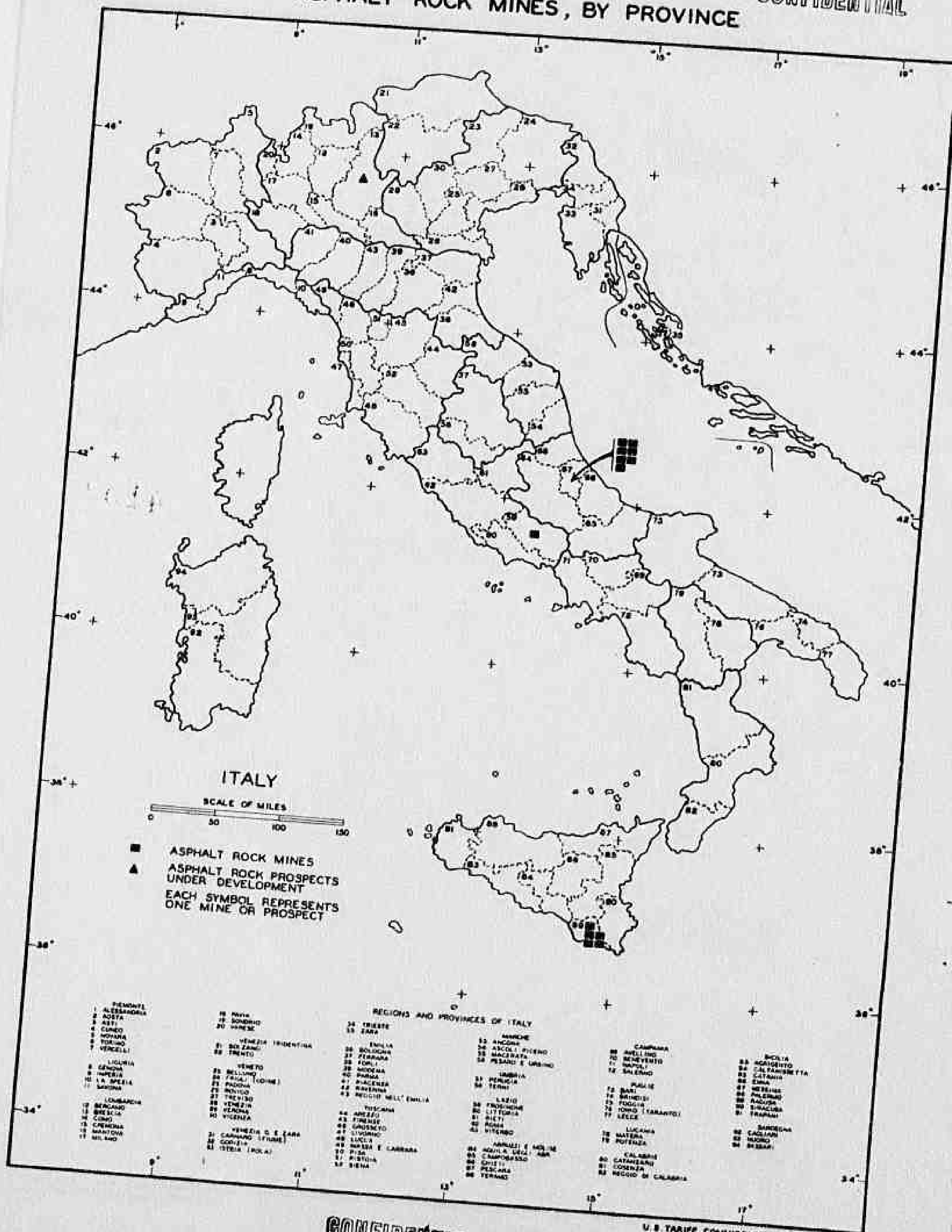
ASBESTOS ROCK MINES, BY PROVINCE



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ASPHALT ROCK MINES, BY PROVINCE

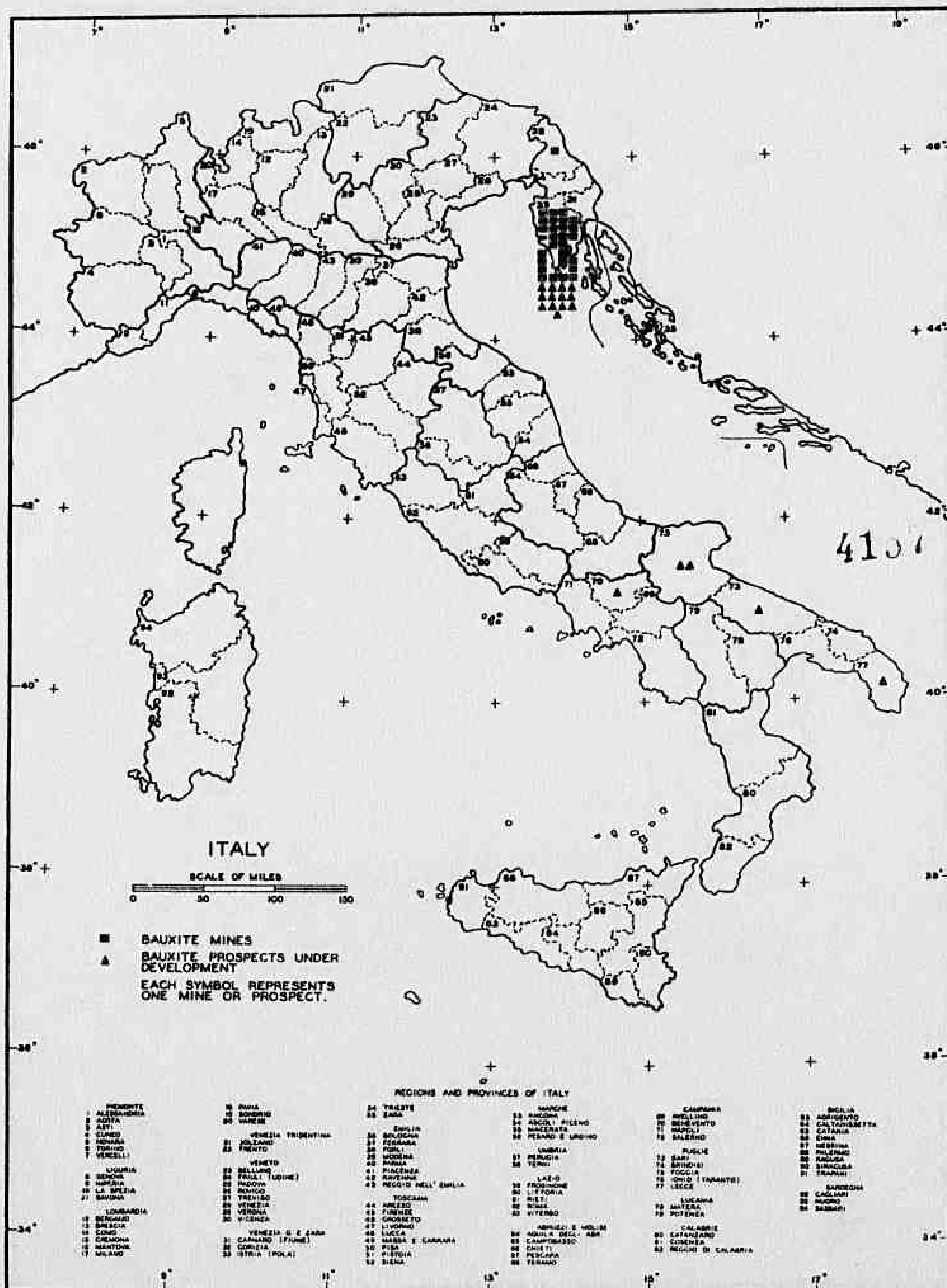
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BAUXITE MINES, BY PROVINCE

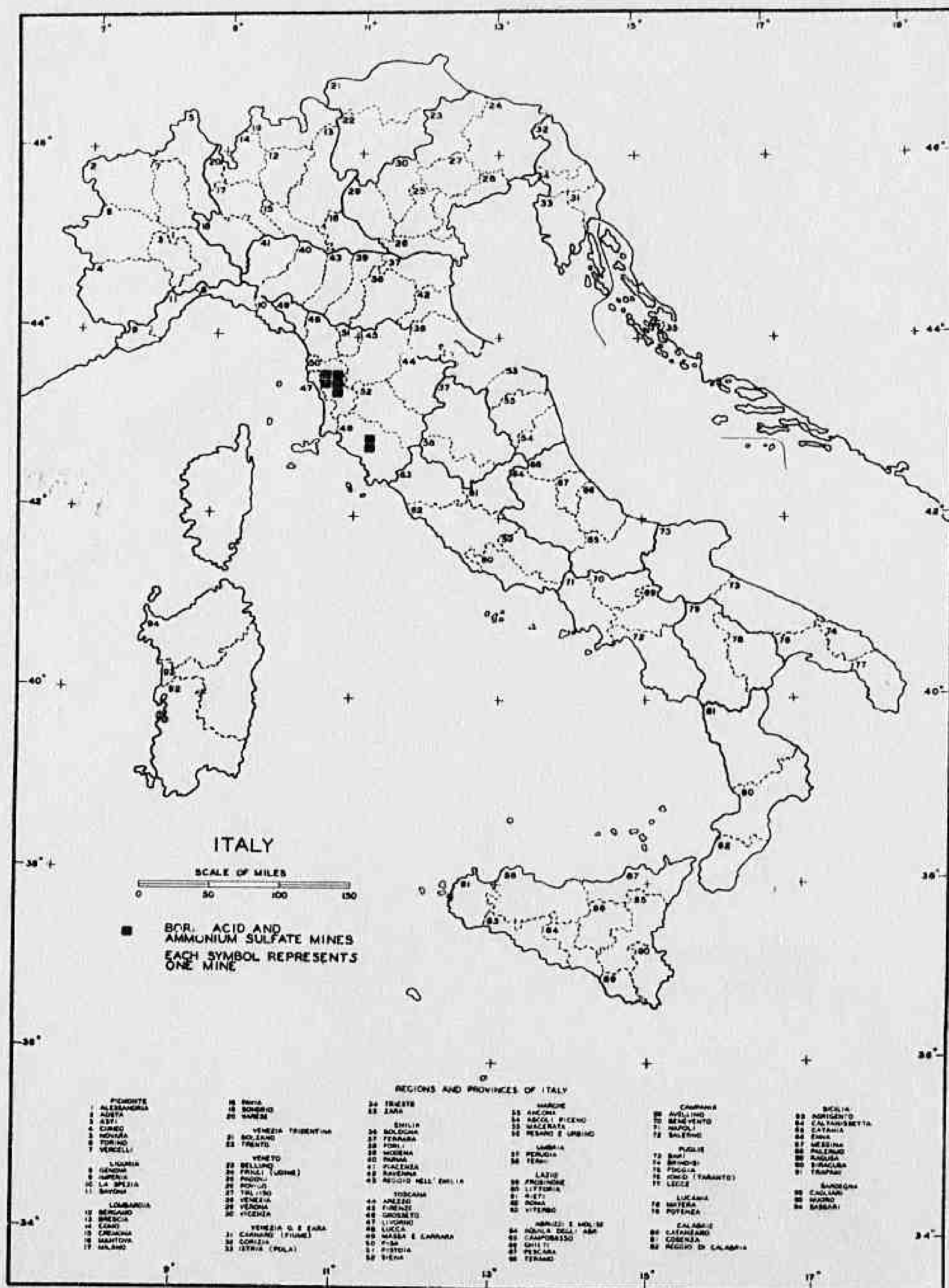


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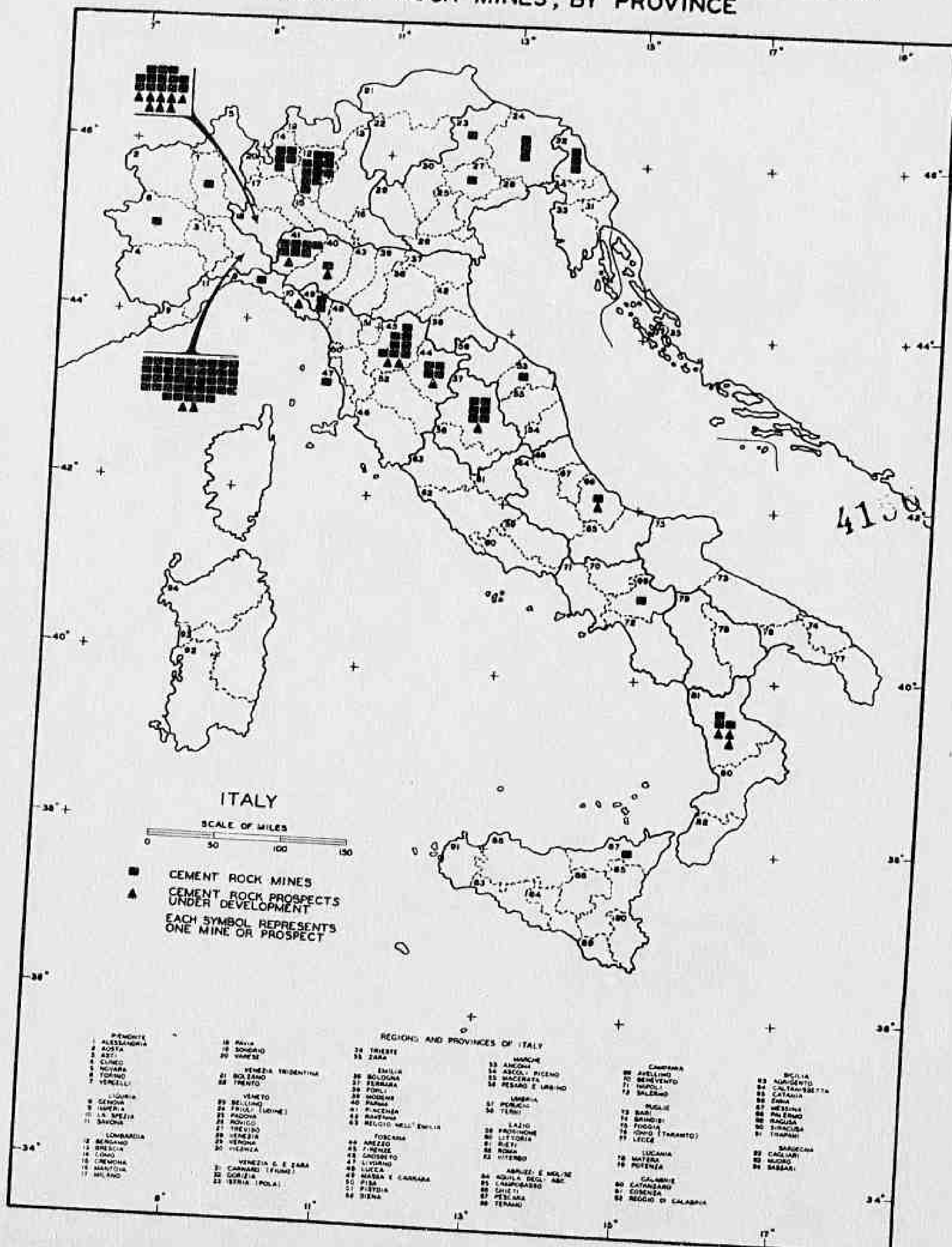
BORIC ACID AND AMMONIUM SULFATE MINES, BY PROVINCE



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CEMENT ROCK MINES, BY PROVINCE

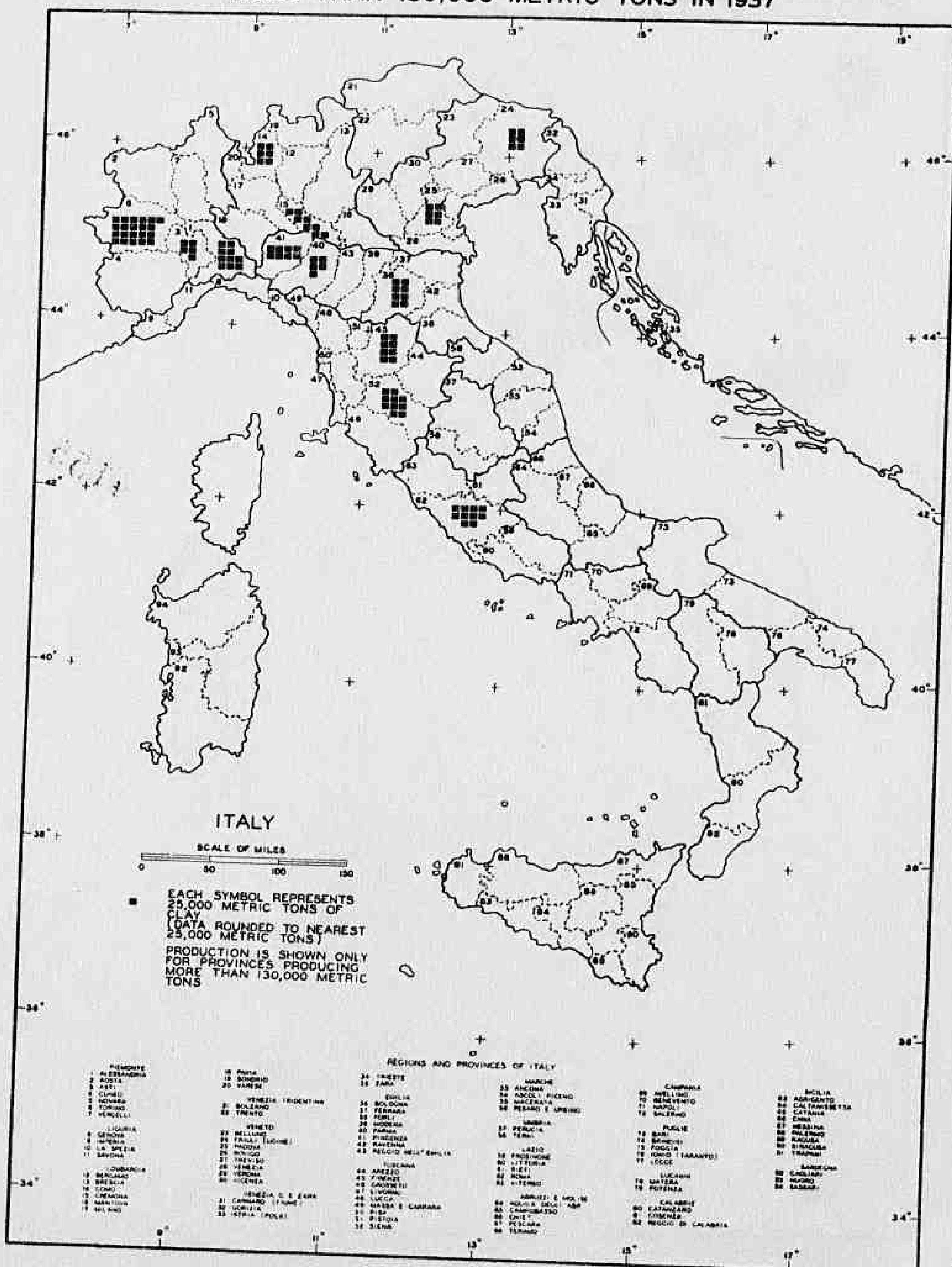
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CLAY PRODUCTION IN PROVINCES PRODUCING
MORE THAN 130,000 METRIC TONS IN 1937

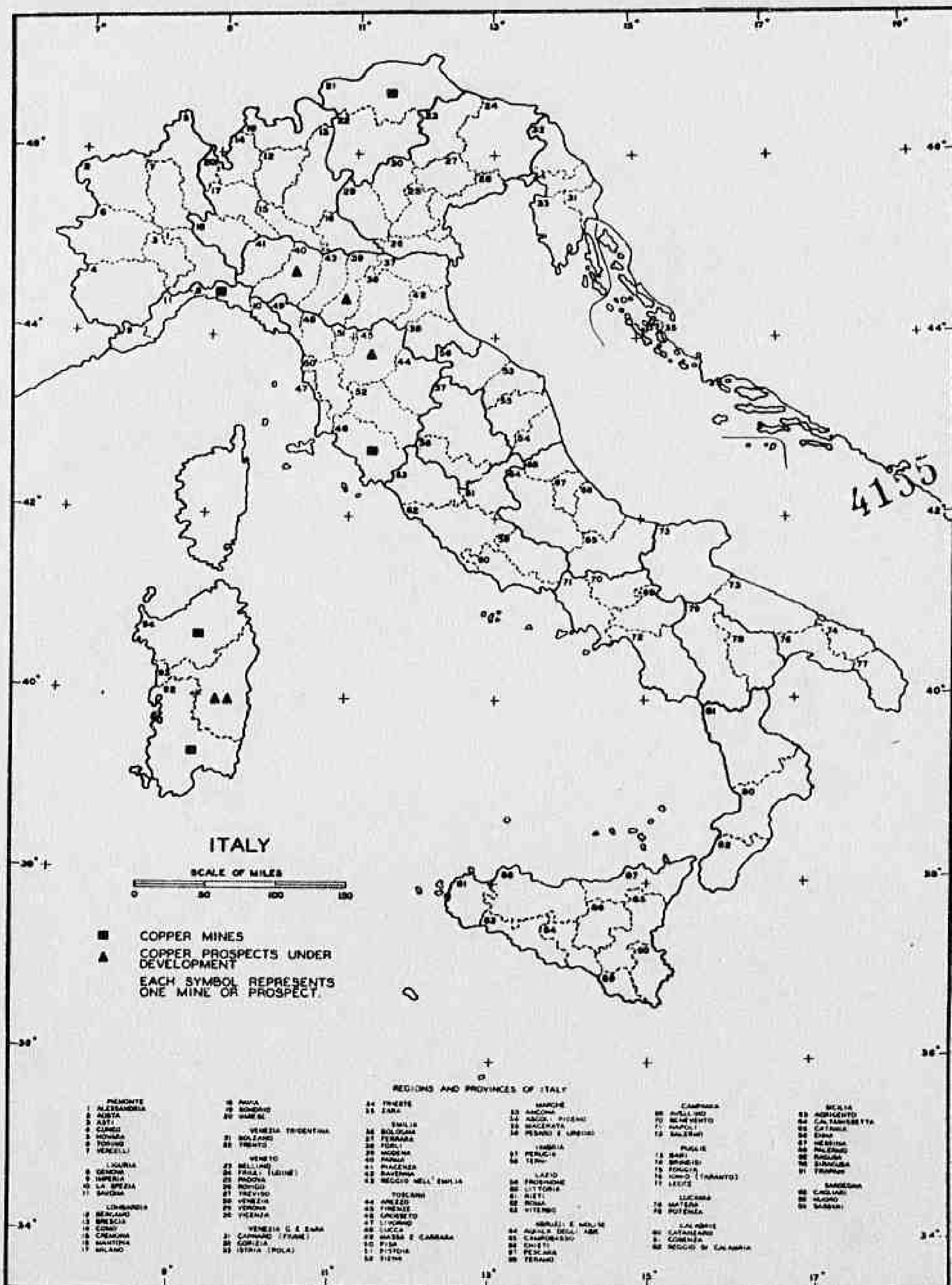
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COPPER MINES, BY PROVINCE

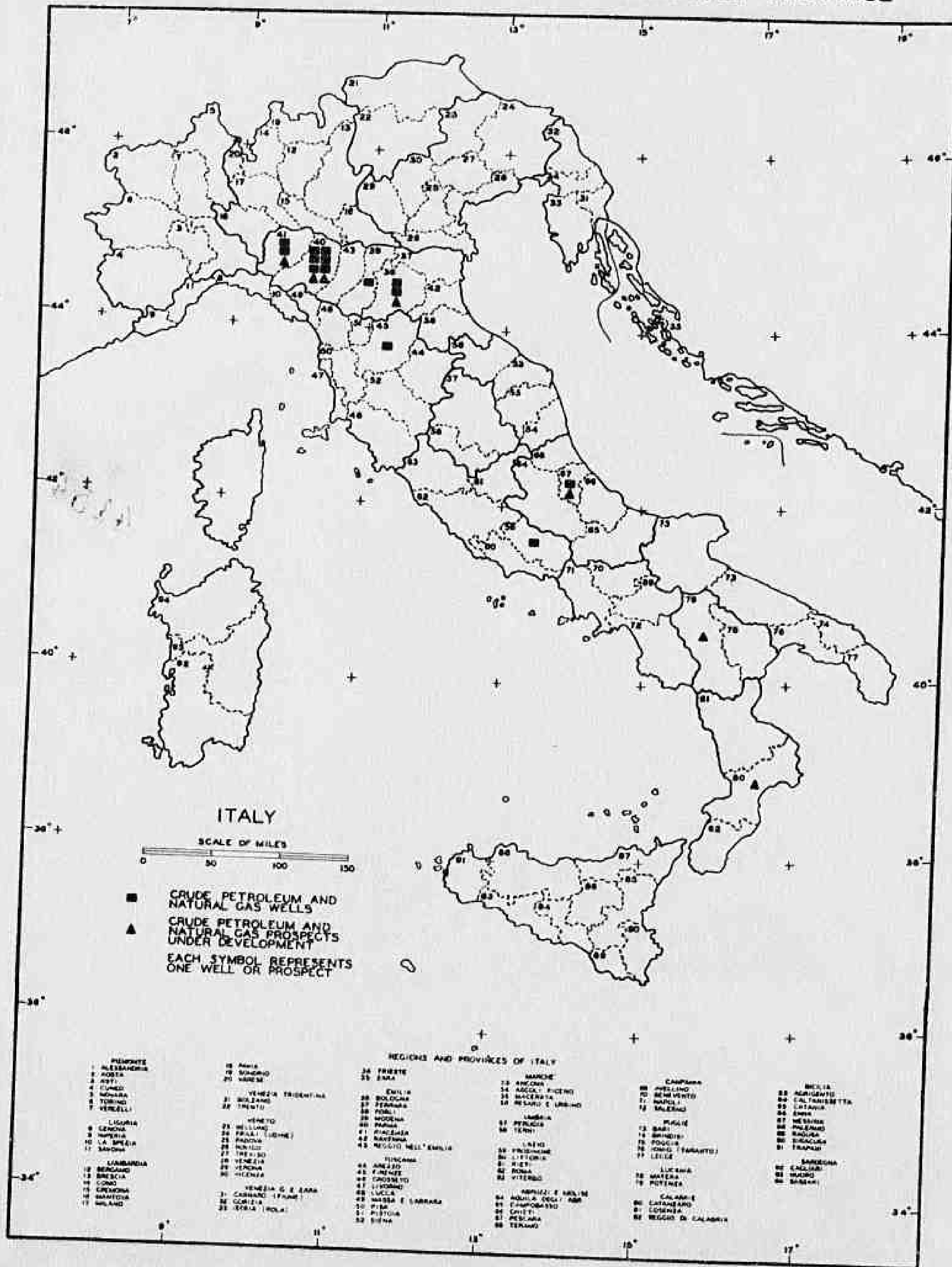


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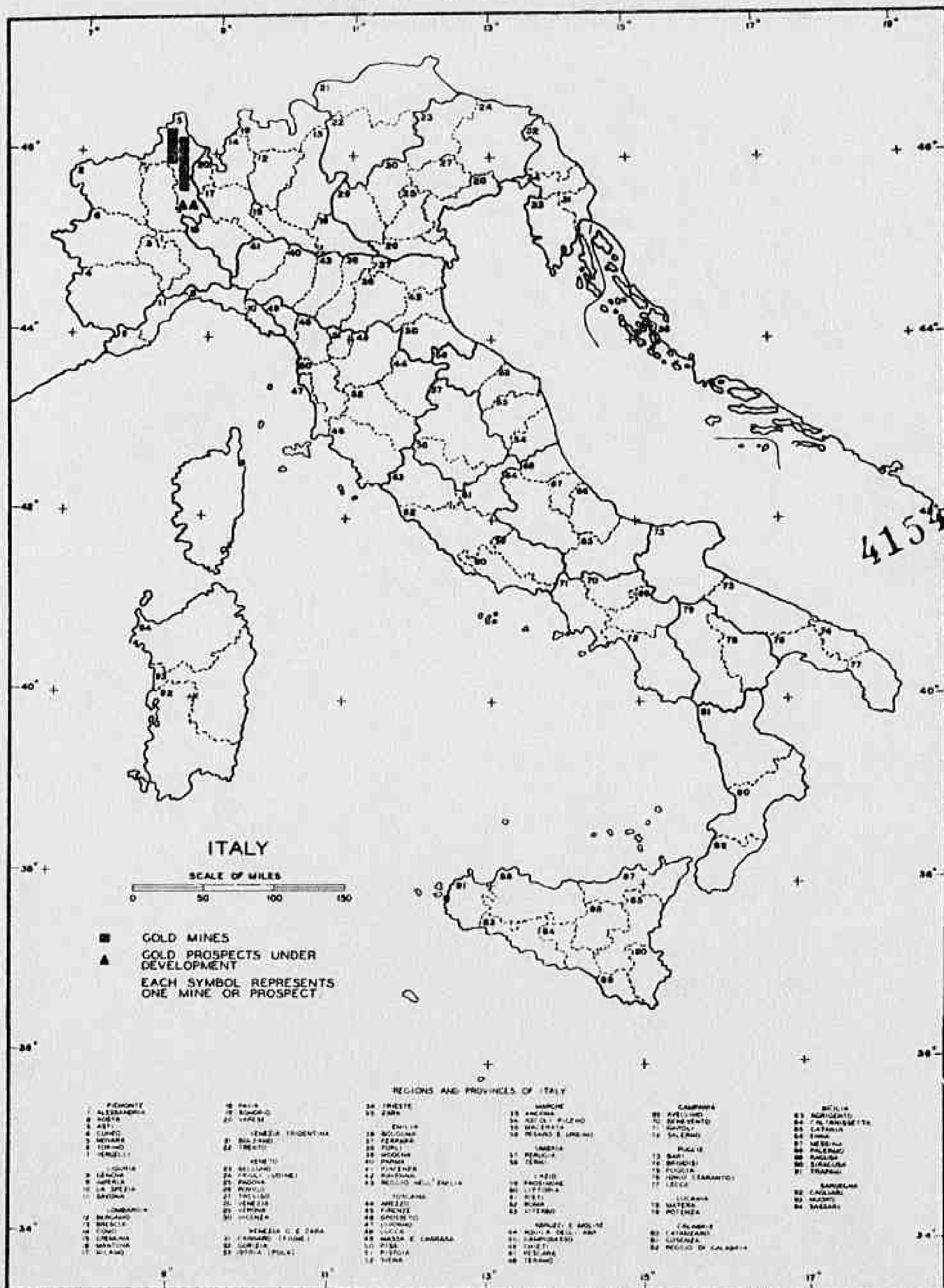
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CRUDE PETROLEUM AND NATURAL G.S WELLS, BY PROVINCE



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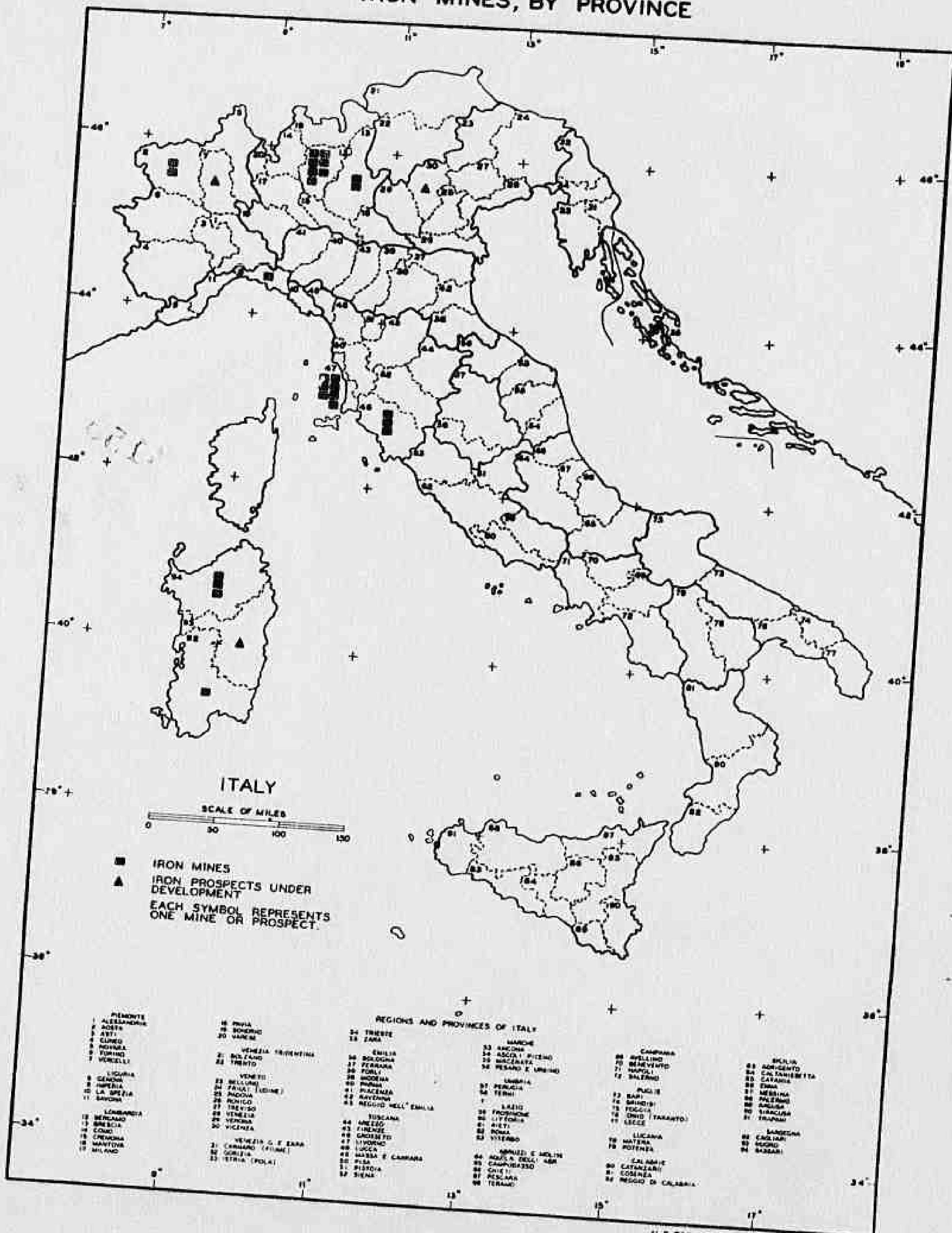
GOLD MINES, BY PROVINCE



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IRON MINES, BY PROVINCE

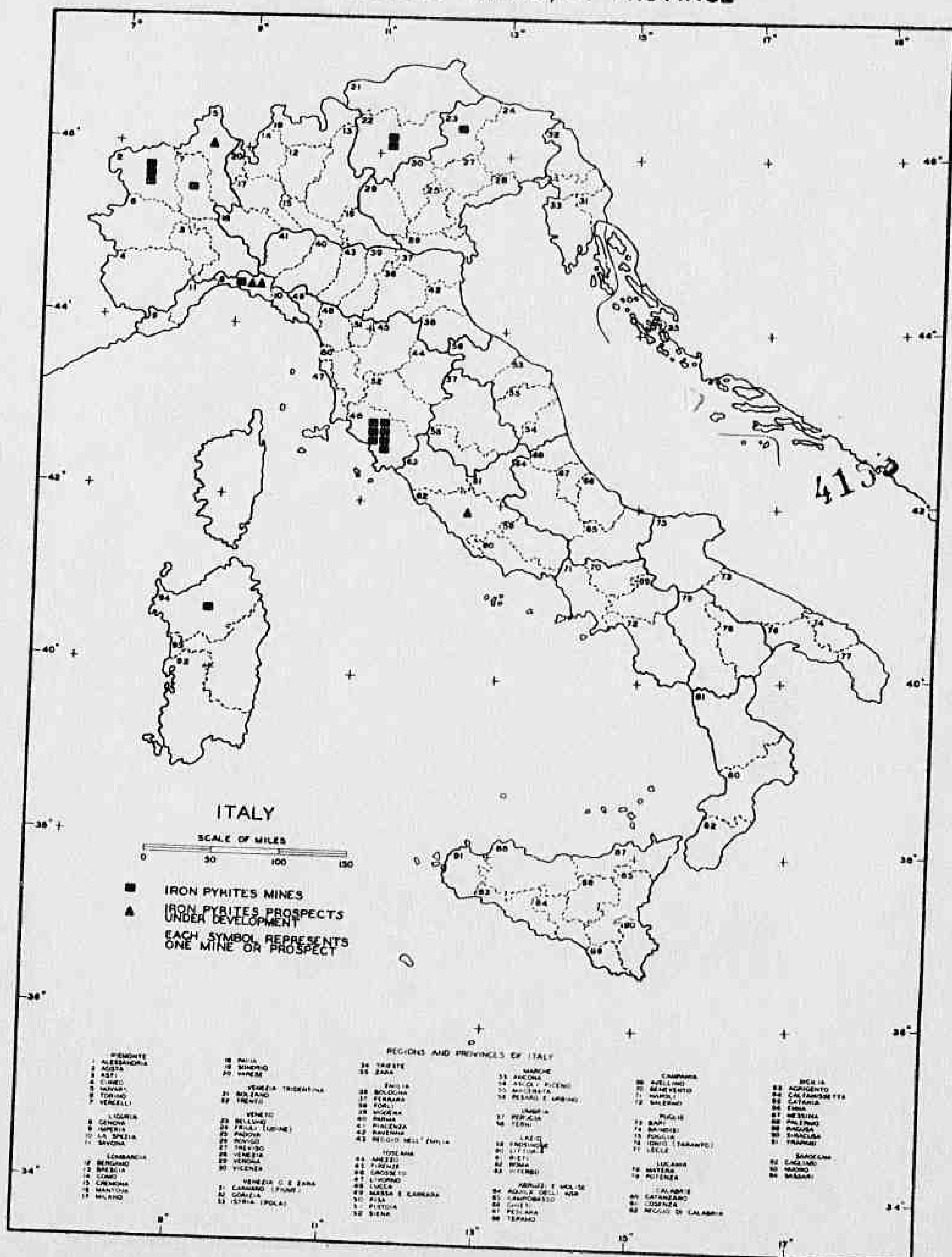
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IRON PYRITES MINES, BY PROVINCE

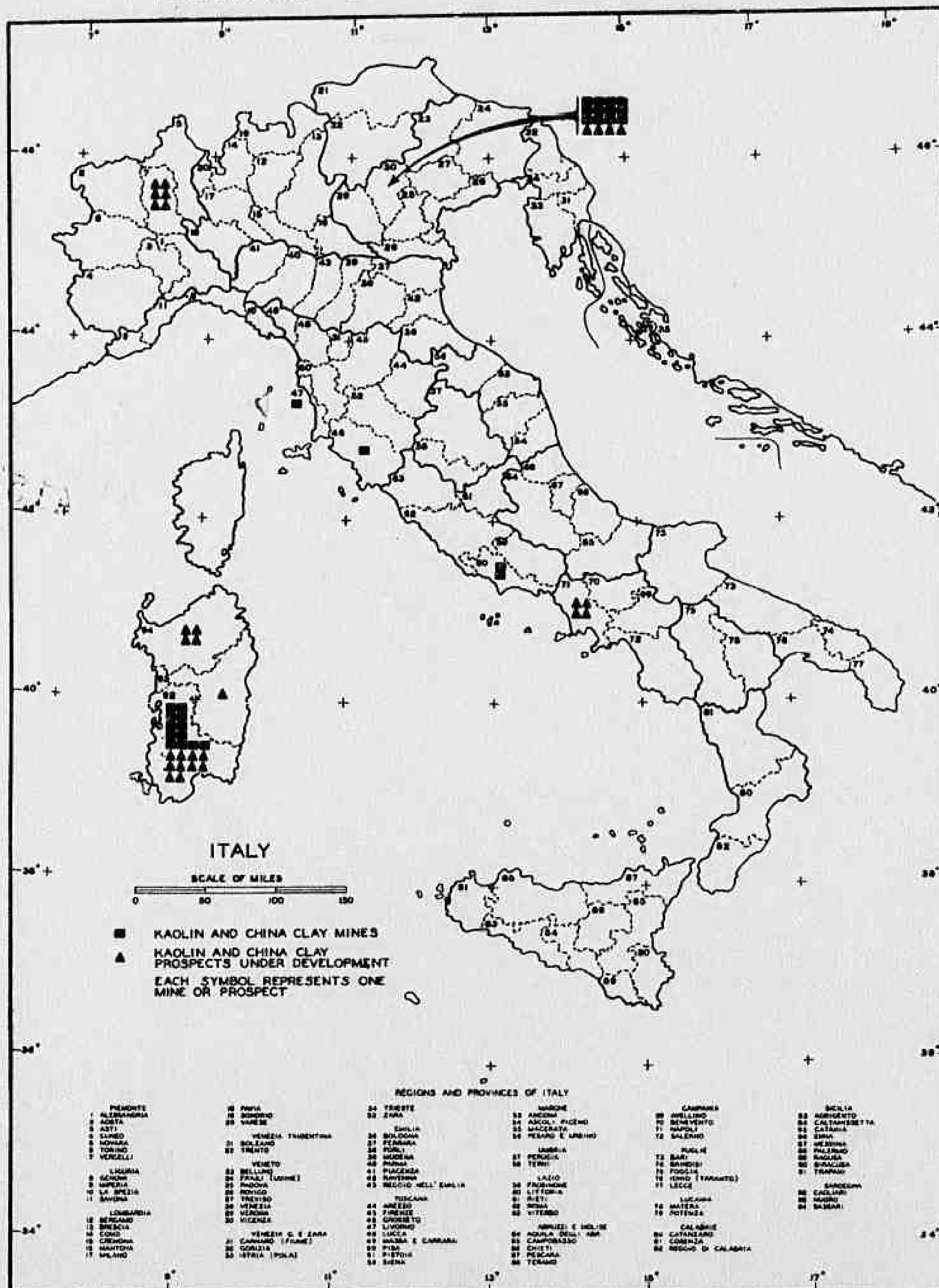


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KAOLIN AND CHINA CLAY MINES, BY PROVINCE

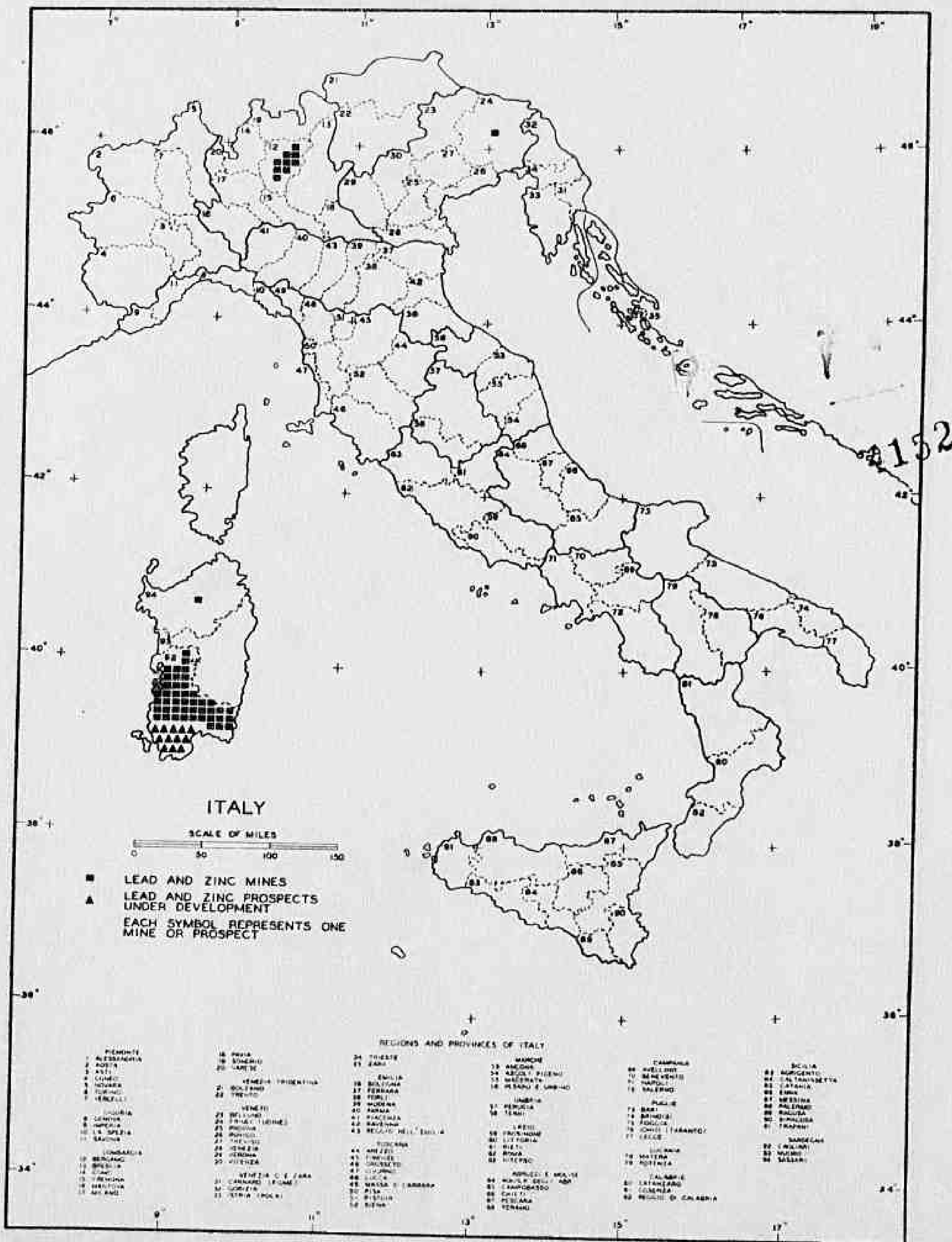


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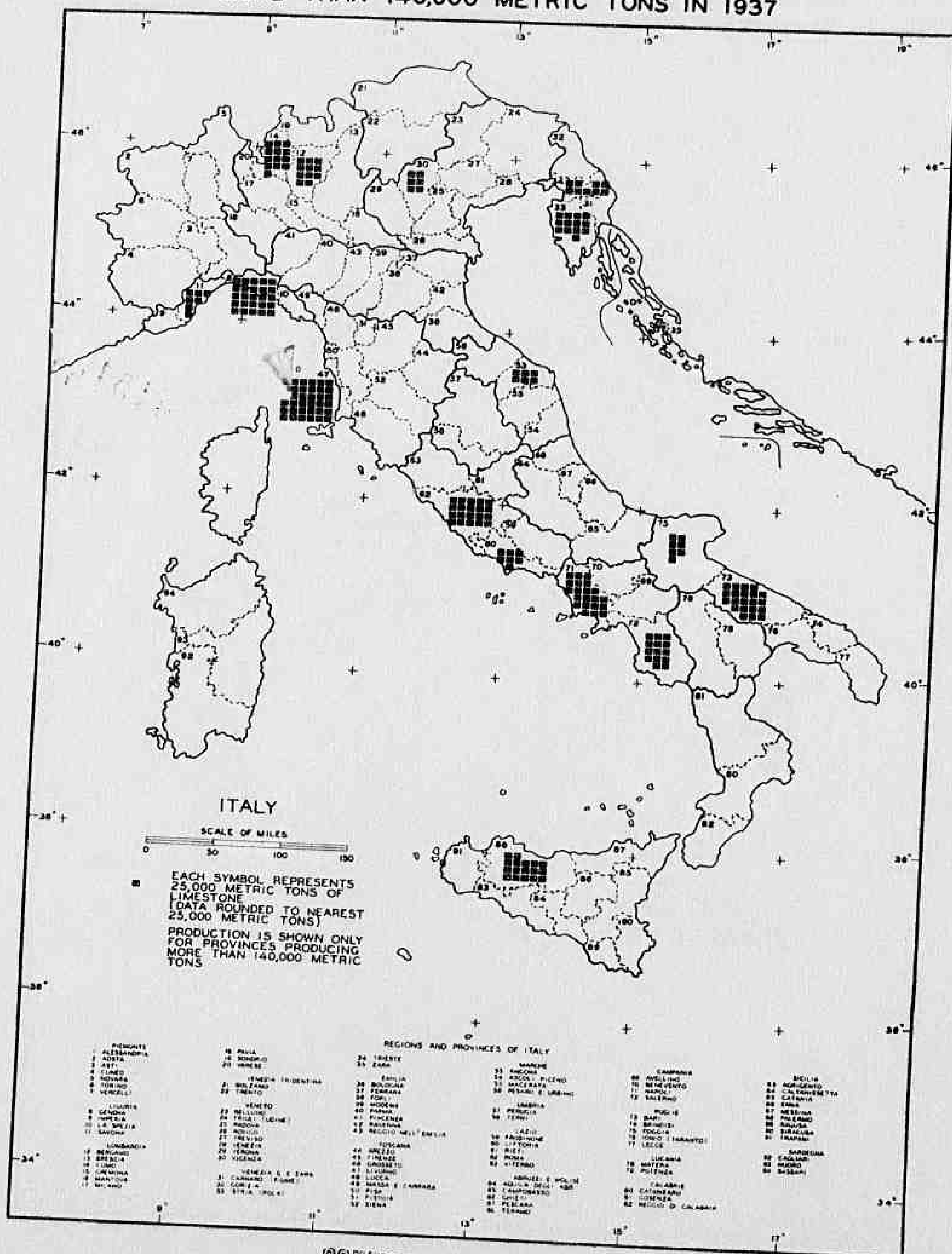
LEAD AND ZINC MINES, BY PROVINCE



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LIMESTONE PRODUCTION IN PROVINCES PRODUCING MORE THAN 140,000 METRIC TONS IN 1937

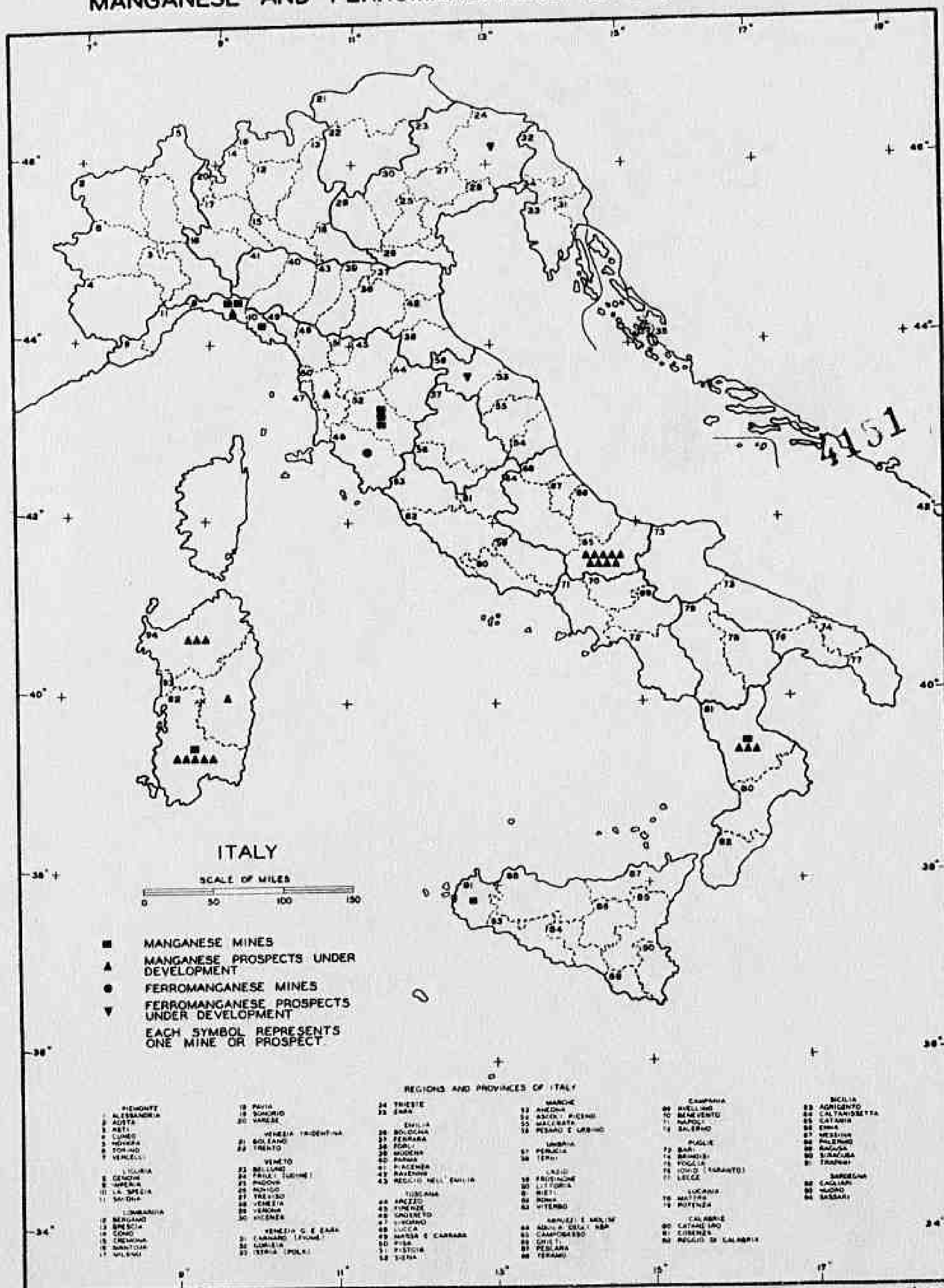


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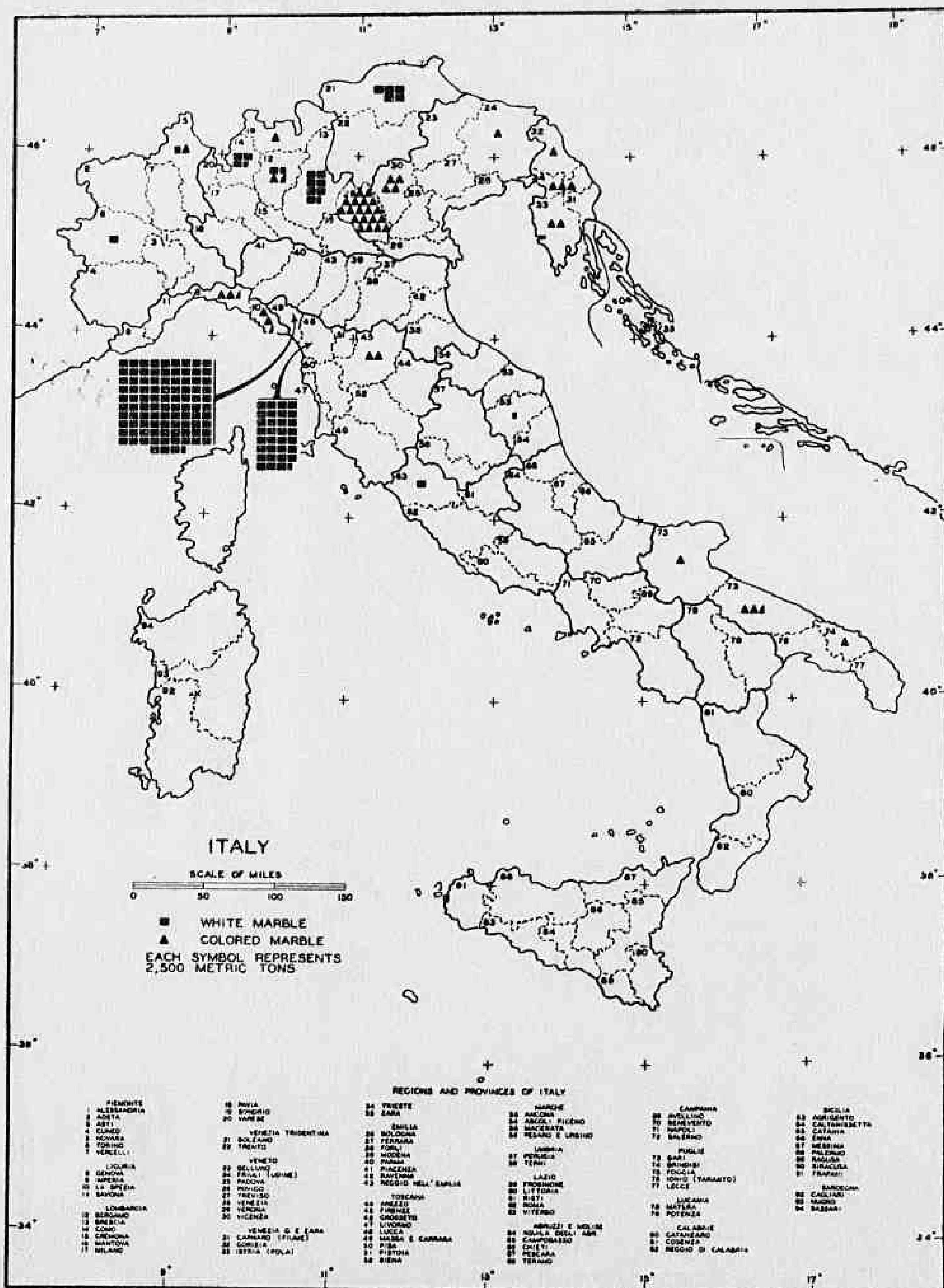
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MANGANESE AND FERROMANGANESE MINES, BY PROVINCE



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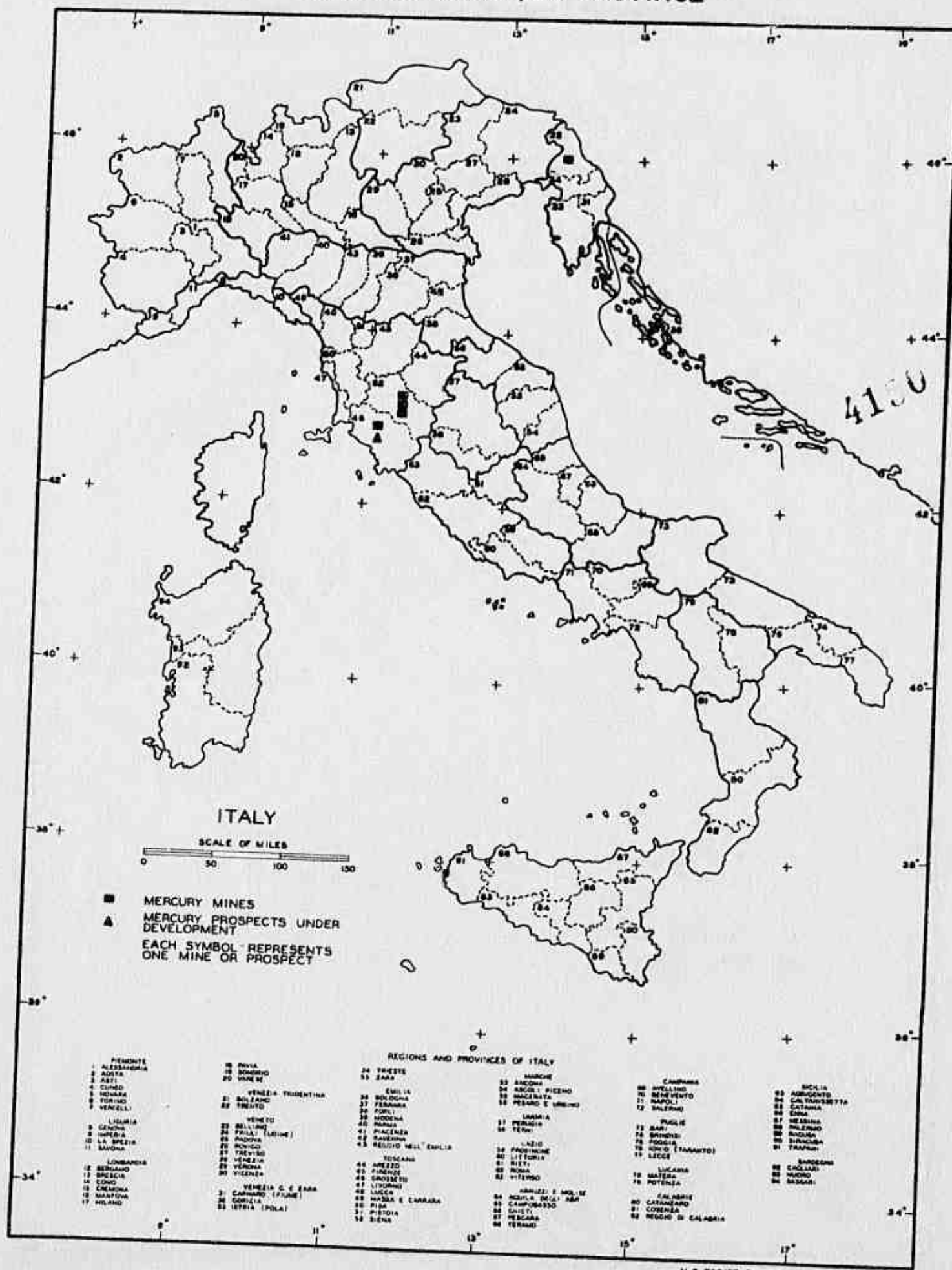
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MERCURY MINES, BY PROVINCE

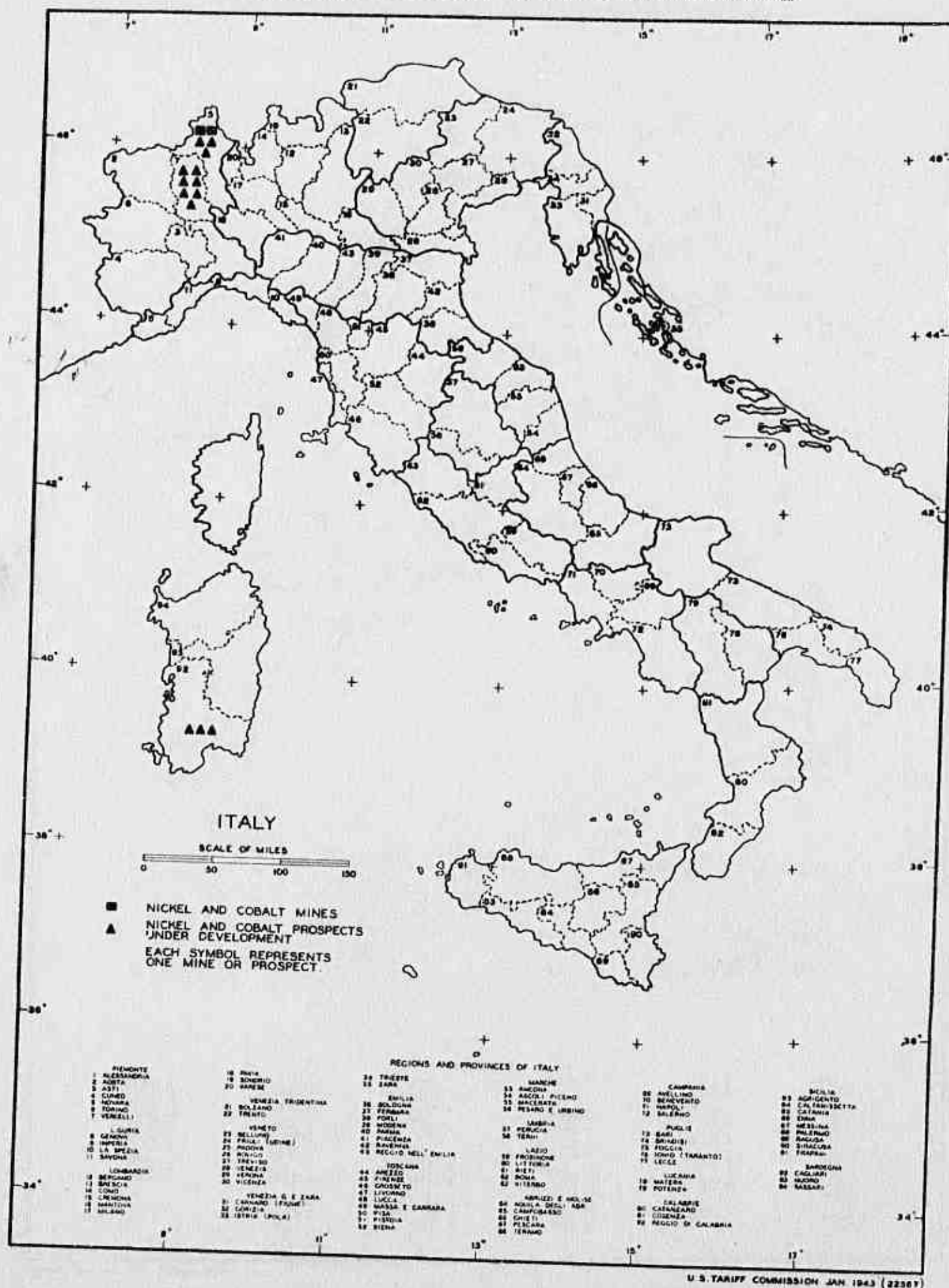


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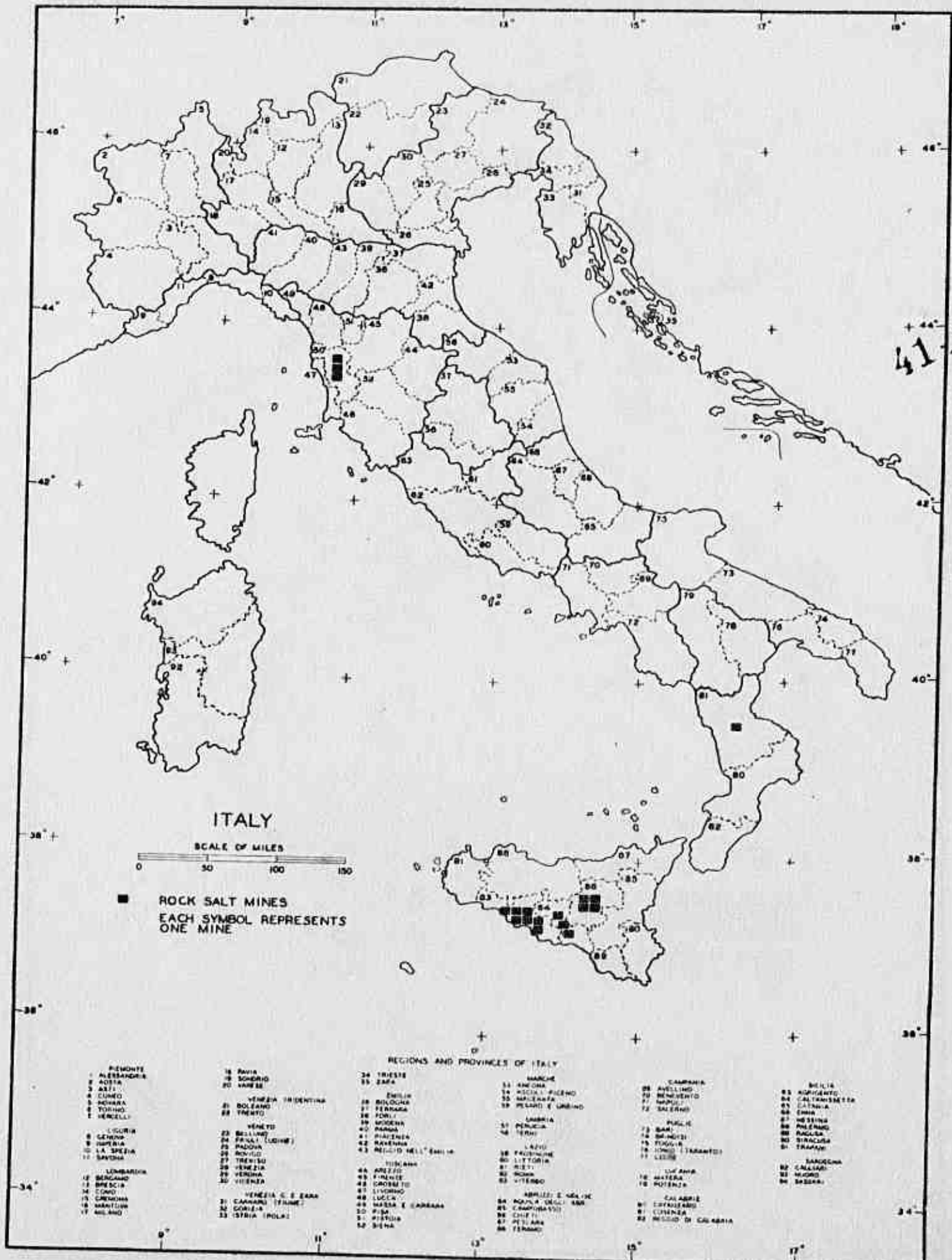
NICKEL AND COBALT MINES, BY PROVINCE



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ROCK SALT MINES, BY PROVINCE

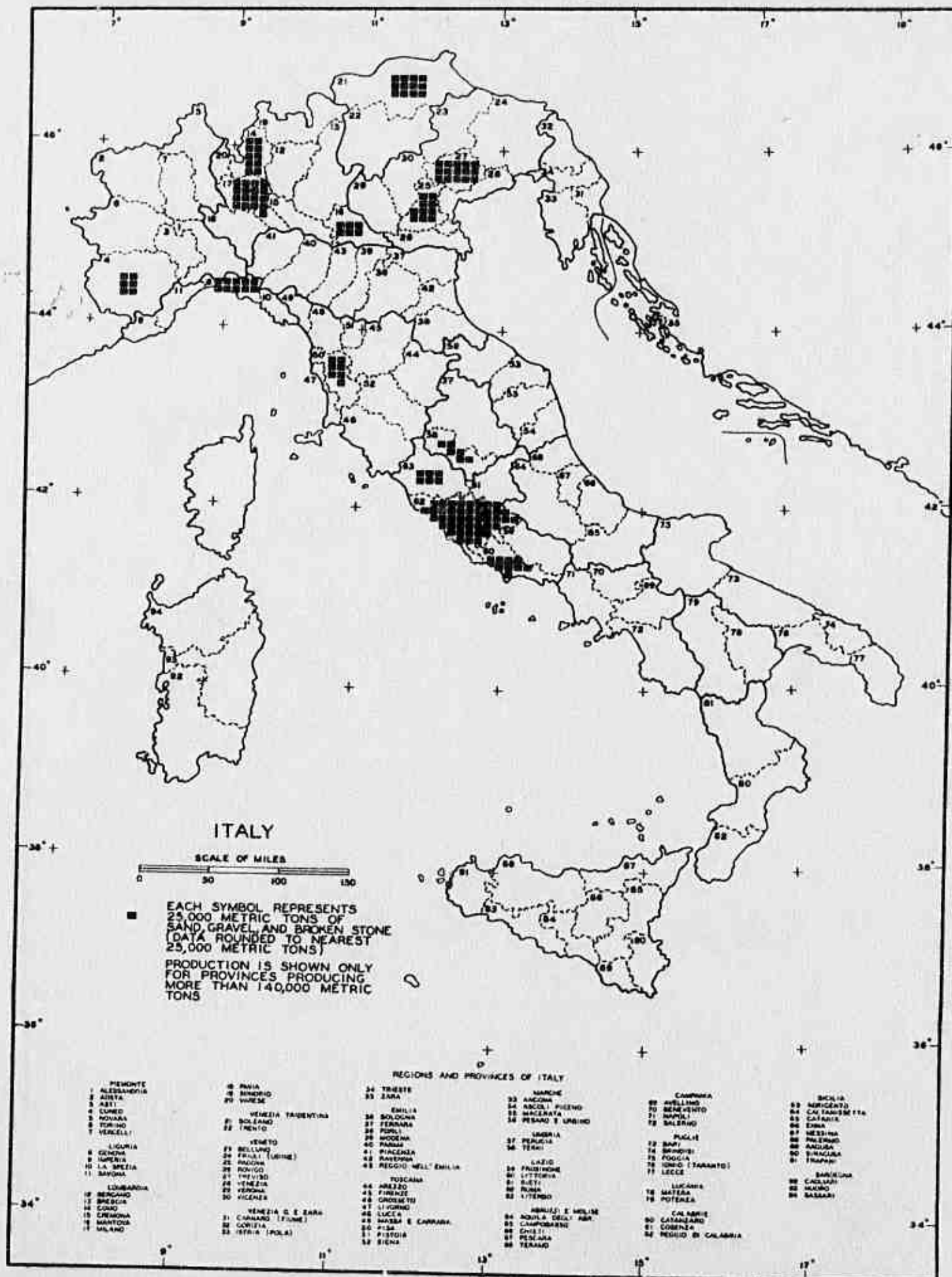


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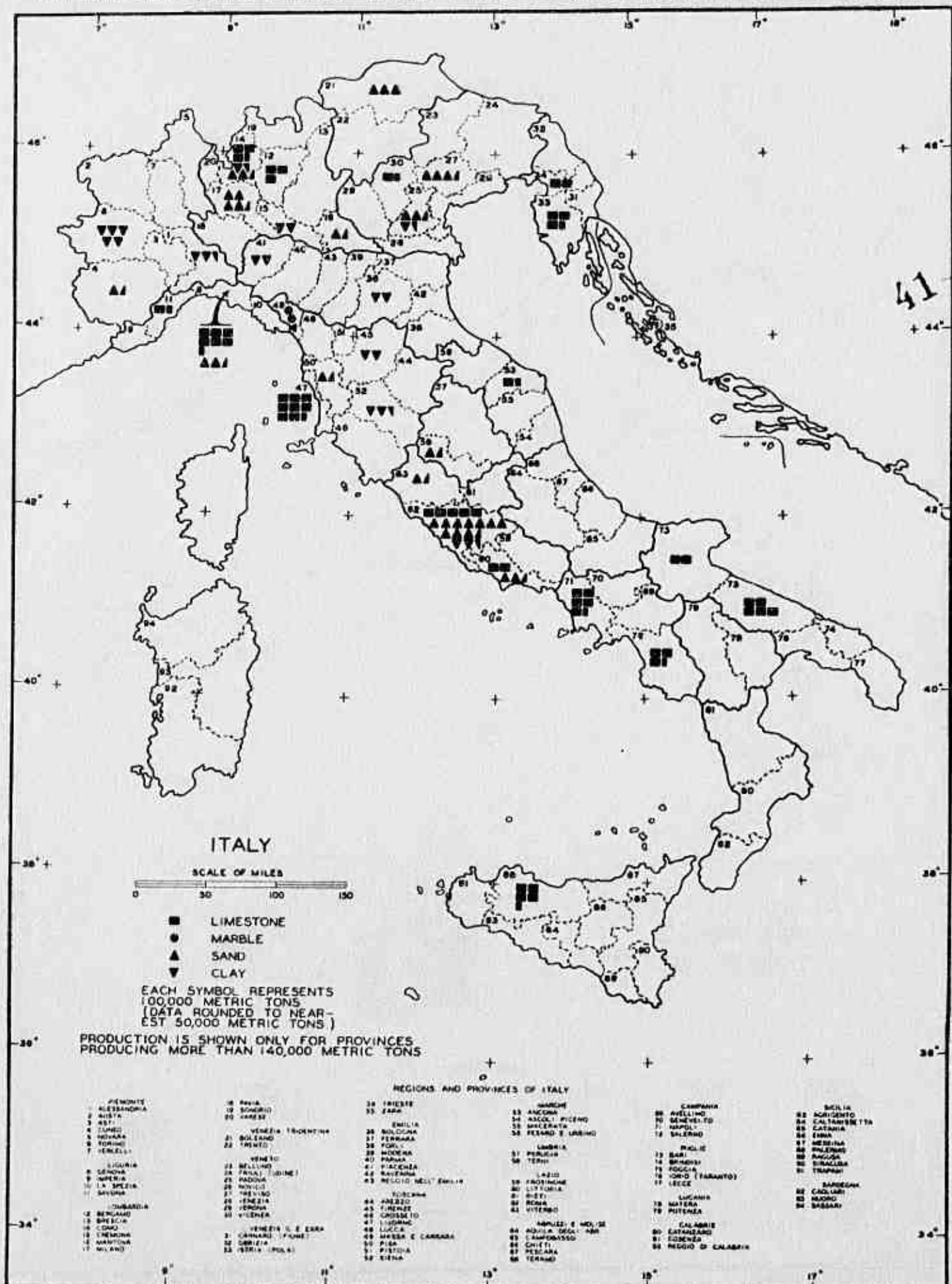
**SAND, GRAVEL, AND BROKEN STONE PRODUCTION IN PROVINCES
PRODUCING MORE THAN 140,000 METRIC TONS IN 1937**



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PRODUCTION OF STONE, SAND, AND CLAY MATERIALS IN PROVINCES PRODUCING MORE THAN 140,000 METRIC TONS IN 1937

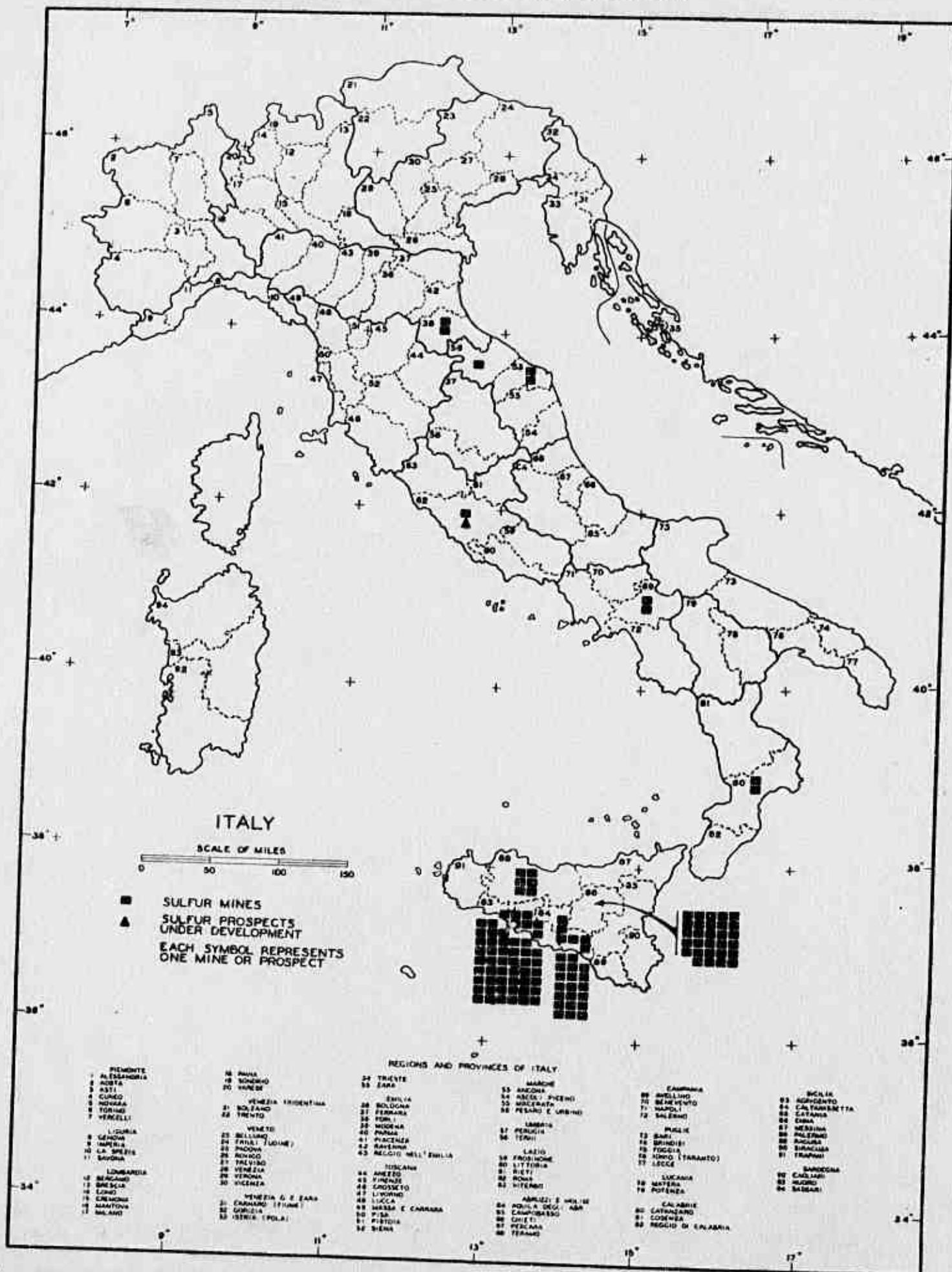


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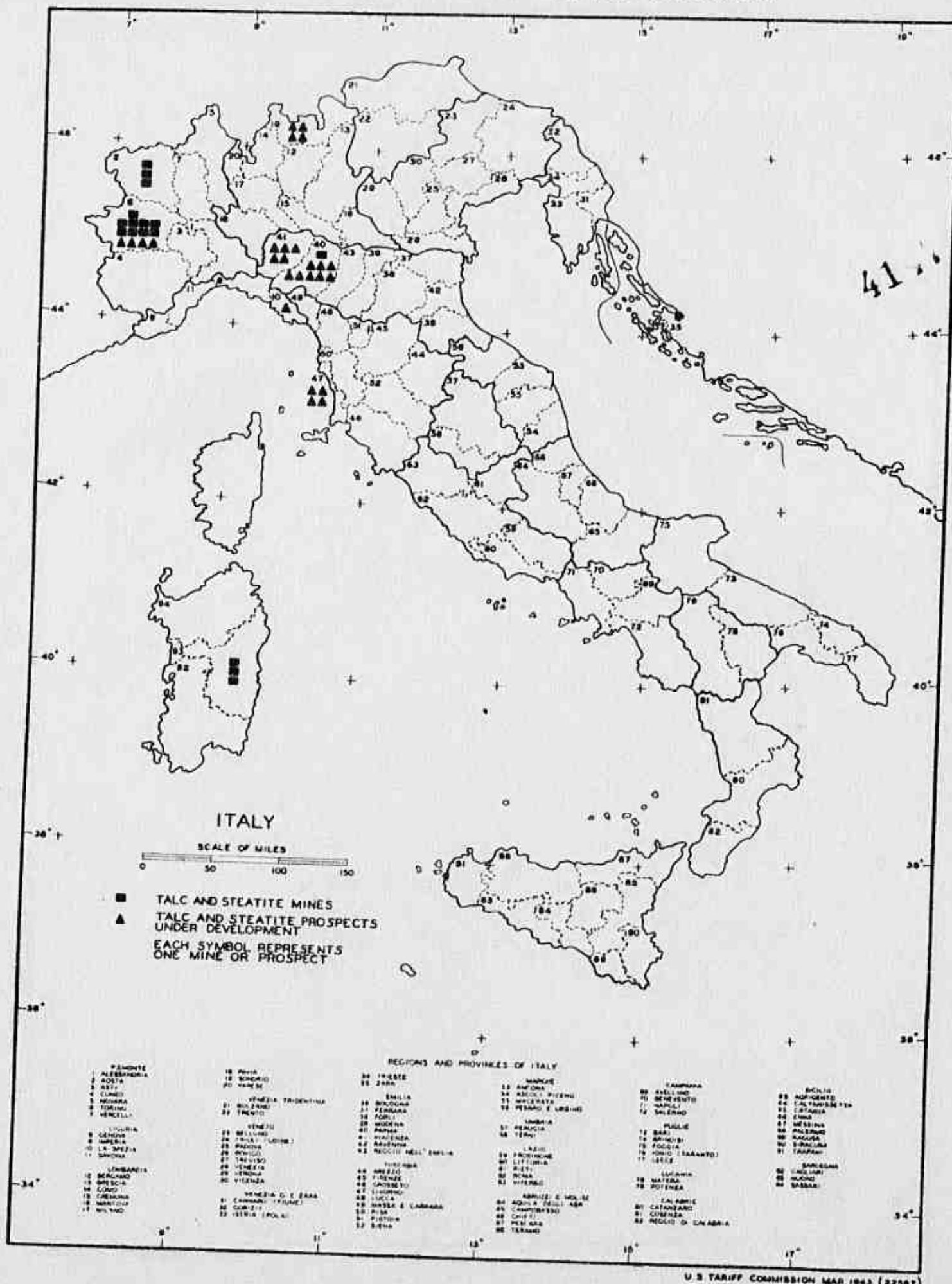
SULFUR MINES, BY PROVINCE



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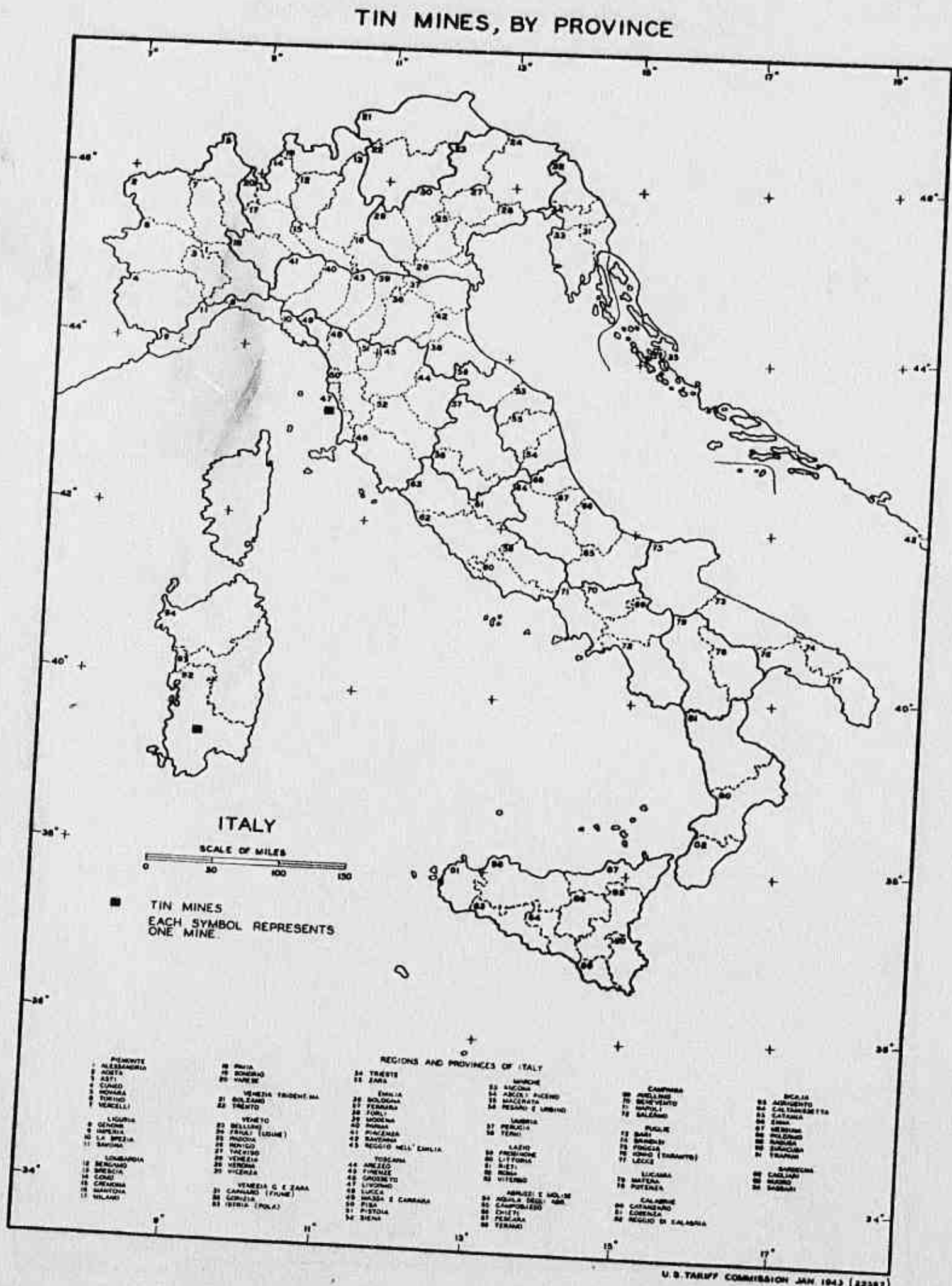
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TALC AND STEATITE MINES, BY PROVINCE



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