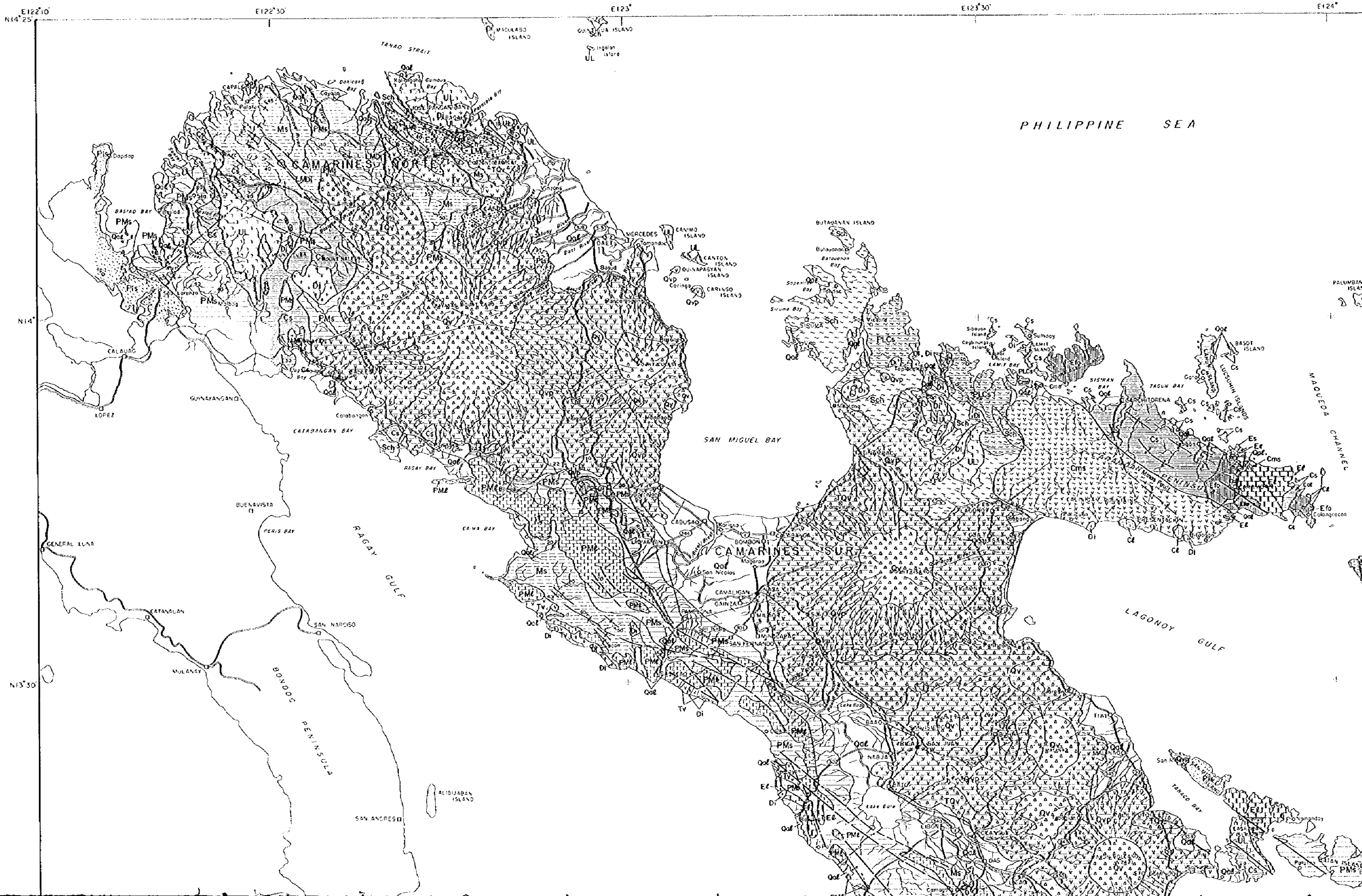
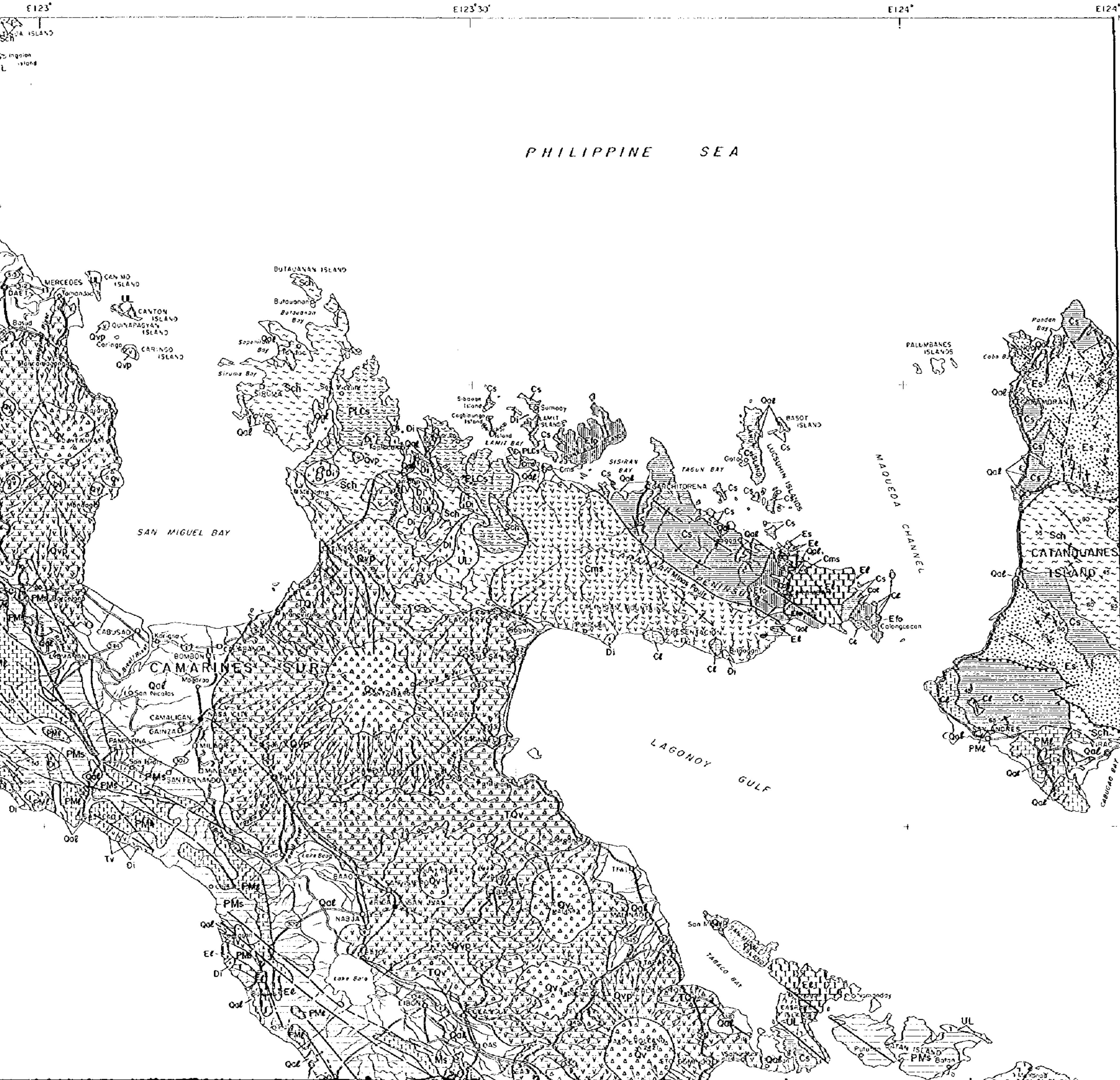
Table 4-1 Abbreviation of minerals

Adu	Aduralia
Alu	Alunite
Ang	Anglesite
Ank	Ankerite
Anh	Anhydrite
Ap	Apatite
Arg	Argentite
Apy	Arsenopyrite
Ata	Atacamite
Azu	Azurite
Brt	Barite
Bt	Biotie
Bis	Bismuthinite
Bn	Bornite
Bol	Boulangerite
Bor	Bournonite
Bro	Brochantite
Cal	Calcite
Car	Carbonate
Cst	Cassiterite
Cc	Chalcocite
Ce	Cerssite
Cer	Cervantite
Chl	Chlorite
Cov	Covelline
Ccp	Chalcopyrite
Ccl	Crysocolla
Crs	Cristobarite
Crp	Cryptomelane
Cup	Cuprite
Dg	Digenite
Dol	Dolomite
El	Electrum
Ena	Enargite
Ep	Epidote
Fl	Fluorite
Fre	Freibergite
Gn	Galena
Gt	Goethite
Gp	Gypsum
Hem	Hematite
Hbl	Hornblend
Ill	Illite
Jam	Jamesonite
Jar	Jarosite
Kln	Kaolinite
Kfs	K-Feldsper
Lm	Limonite
Ma	Malachite
Mag	Magnetite
Mar	Marcasite
Mo	Molybdenite
Ms	Muscobite
Op	Opal
Ol	Olivine
Phos	Phosphate
Pl	Plagioclase
Psi	Psilomelane
Px	Pyroxine
Py	Pyrite
Po	Pyrrhotite
Pyg	Pyragyrite
Pyro	Pyrolusite
Qtz	Quartz
Rds	Rhodochrosite
Sch	Scheelite
Ser	Sericite
Sd	Siderite
Smc	Smectite
Smi	Smithsonite
Spc	Specularite
Sp	Sphalerite
Stb	Stibnite
Tnt	Tenantite
Tth	Tetrahedrite
Tnr	Tenorite
Tor	Tourmaline
Ur	Uraninite
Wlf	Wolframite


E122°10'
N14°25'
E122°30'
E123°
E123°30'
E124°
N14°
N13°30'
PHILIPPINE SEA
CAMARINES NORTE
CAMARINES SUR
SAN MIGUEL BAY
LAGONOY GULF
RAGAY GULF
BONDOC PENINSULA
MAQUEDA CHANNEL
TABACO BAY
CATABANGAN BAY
RAGAY BAY
PERIS BAY
MACULABO ISLAND
CANIMO ISLAND
CANTON ISLAND
QUINAPAGYAN ISLAND
CARINGO ISLAND
BUTAUANAN ISLAND
BASOT ISLAND
ALIBIJABAN ISLAND
MERCEDES
CALAUAG
LOPEZ
GUINAYANGAN
BUENAVISTA
GENERAL LUNA
CATANAUAN
SAN NARCISO
MULANAY
SAN ANDRES
CABUSAO
BOMBON
CAMALIGAN
SAN FERNANDO
TIWI



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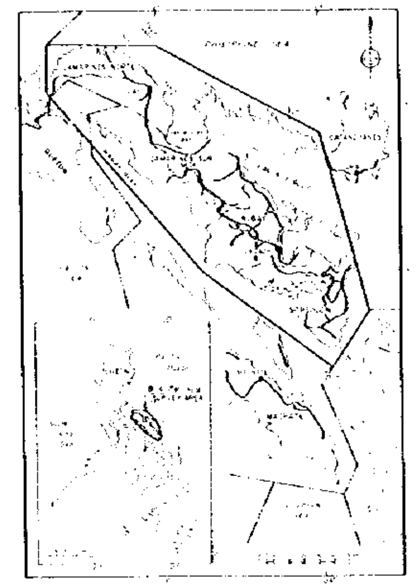
鉱 物 資 源 広 域 調 査
フィリピン共和国ビコール地域



平成 10 年 2 月

Scale 1 : 250,000

0 5 10 15 20km

Fig.I-3-1 Geological Map of the Bicol Area

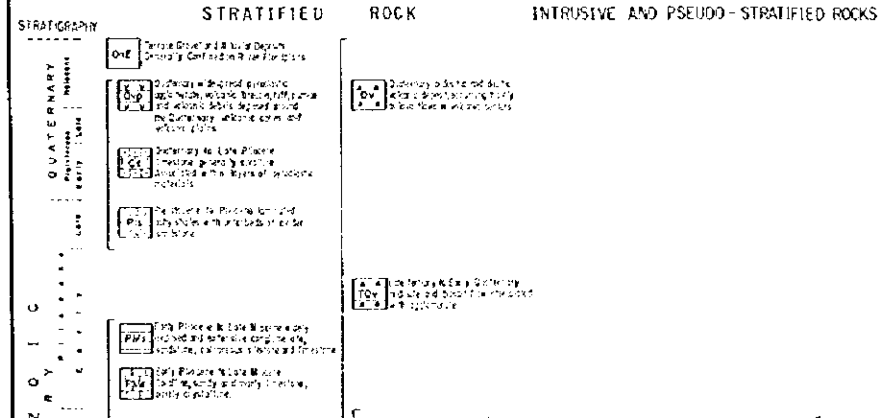
LEGEND

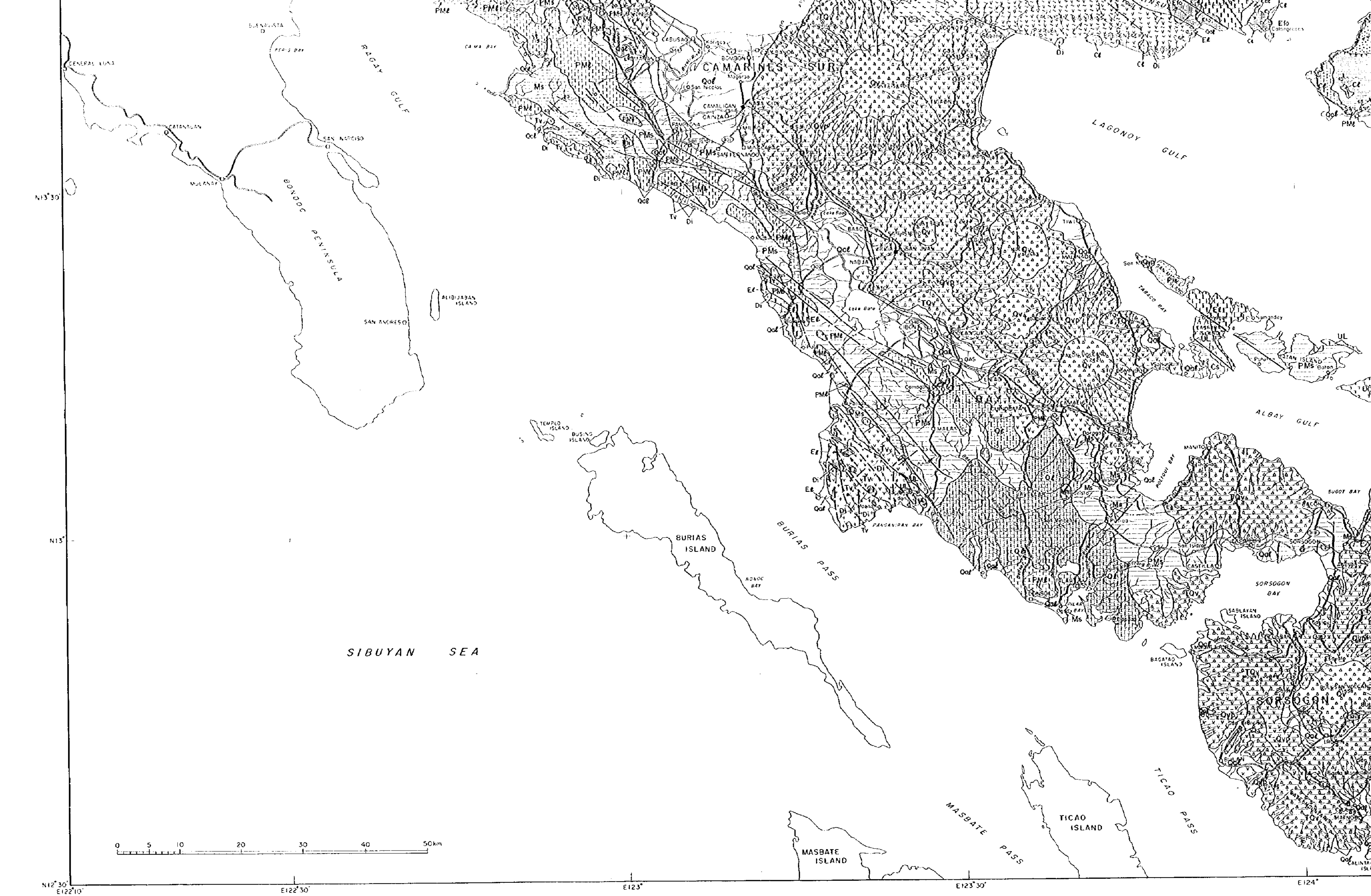
- Chartered city
- City capital of province
- Capital of province
- Municipality or municipal district
- Barangay
- Railroad
- Provincial boundary
- First and second class road
- Route markers : National
- Route markers : Provincial

EXPLAWTION

STRATIFIED ROCK

INTRUSIVE AND PSEUDO-STRATIFIED ROCKS




CAMARINES SUR
ALBAY
SORSOGON
RAGAY GULF
LAGONOY GULF
ALBAY GULF
BONDOC PENINSULA
SIBUYAN SEA
BURIAS ISLAND
BURIAS PASS
TICAO ISLAND
TICAO PASS
MASBATE PASS
MASBATE ISLAND
SORSOGON BAY
TABACO BAY
SUGOT BAY
PANGANIRAN BAY
TEMPLO ISLAND
BUSING ISLAND
ALIBIJABAN ISLAND
BAGATAO ISLAND
SAN ANDRES
SAN NARCISO
CATANAUAN
MULANAY
GENERAL LUNA
BUENAVISTA
N13°30'
N13°
N12°30'
E122°10'
E122°30'
E123°
E123°30'
E124°
0 5 10 20 30 40 50km

LEGEND

- Chartered city
- City capital of province
- Capital of province
- Municipality or municipal district
- Barangay
- Railroad
- Provincial boundary
- First and second class road
- Route markers : National
- Route markers : Provincial

EXPLAWTION

STRATIFIED ROCK

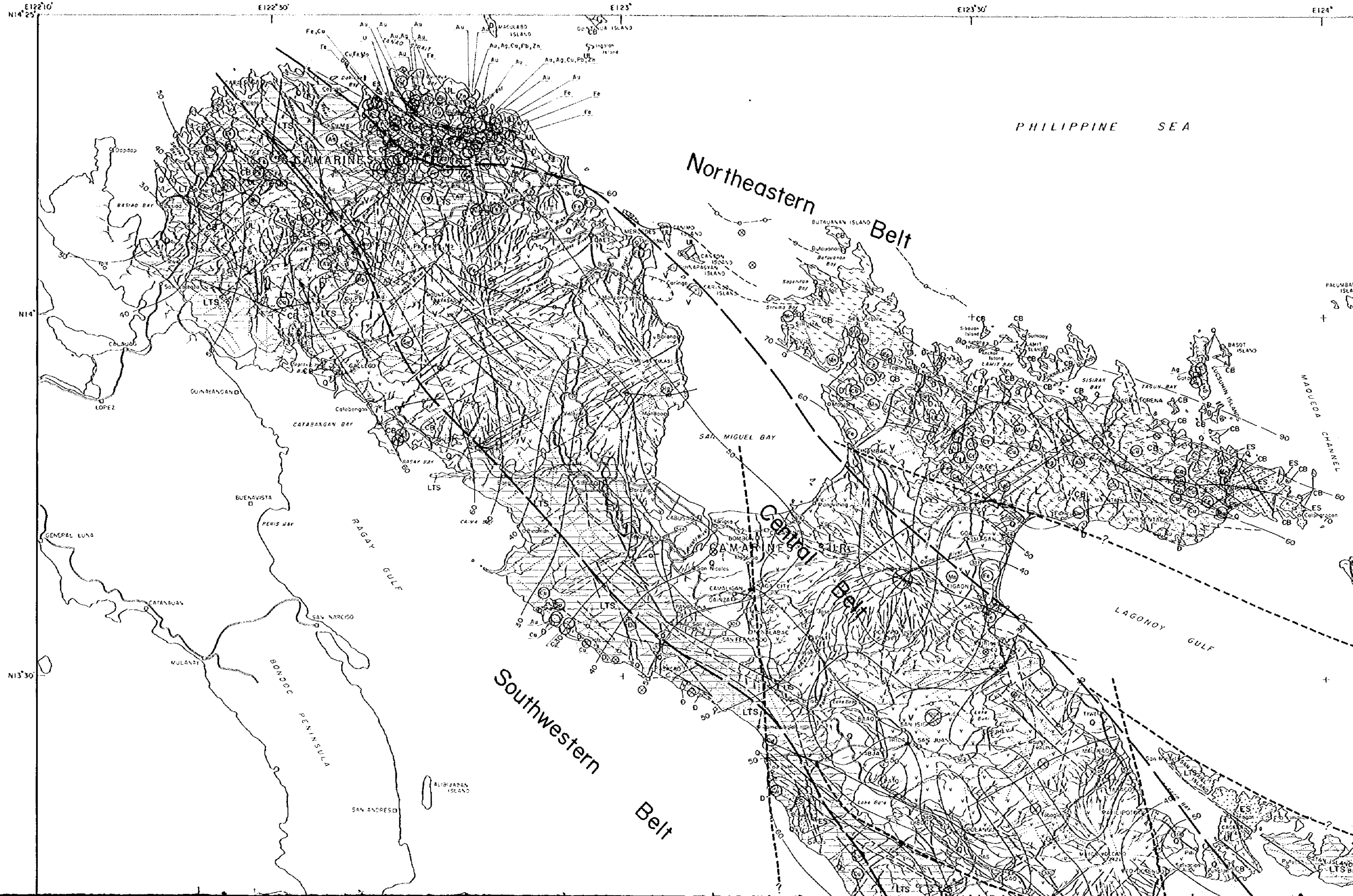
ENTRUSIVE AND PSEUDO-STRATIFIED ROCKS

GEOLOGIC STRUCTURE

- Formational boundary
- Major fault
- Thrust fault
- Plunging anticline
- Plunging syncline
- Strike and dip of bedding plane

Compiled from :

- Geologic Map of Bicol Region (1 : 250,000) by BMG Regional Office V
- Geological Map Quadrangles (1:50,000) of Sheet No.3462-I, II, 3560-I, 3561-I, II, III, IV 3562-I, II, III, IV, 3563-II, III, 3659-I, II 3661-I, II, III, IV, 3662-II, III, 3761-I II III IV
- Geologic and Geochemical Interpretation Map of Catanduanes Island (1:125,000) / The Cooperative Mineral Exploration by JICA/MMAJ – MGB, 1993-1995
- David S.O. Jr., et al (1996) : Geology, Geochemistry, Geochronology and Structures of the Ophiolites in Southeastern Luzon, Philippines Jour. Soc. Geol. Phil. 1996.


E122°10'
E122°30'
E123°
E123°30'
E124°
N14°25'
N14°
N13°30'
PHILIPPINE SEA
Northeastern Belt
Central Belt
Southwestern Belt
SAN MIGUEL BAY
LAGONOY GULF
RAGAY GULF
MAQUEDA CHANNEL
BONDOC PENINSULA
CATABANGAN BAY
BASIAD BAY
GUINAYANGAN
LOPEZ
BUENAVISTA
GENERAL LUNA
CATANAUAN
SAN NARCISO
MULANAY
SAN ANDRES
CAMARINES
CAMARINES SUR

付図

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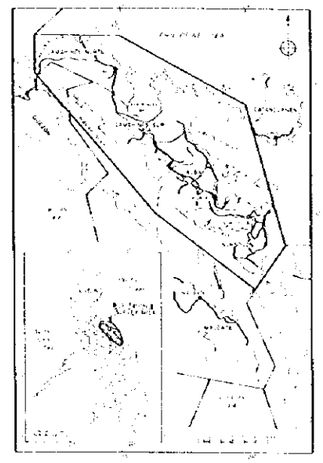
鉱物資源広域調査

フィリピン共和国ビコール地域



平成10年２月

Scale 1 : 250,000

0 5 10 15 20 km

Fig.II-5-1 Comprehensive Map of the Bicol Area

LEGEND

- Chartered city
- City capital of province
- Capital of province
- Municipality or municipal district
- Barangay
- Railroad
- Provincial boundary
- First and second class road
- Route markers : National
- Route markers : Provincial

Geology

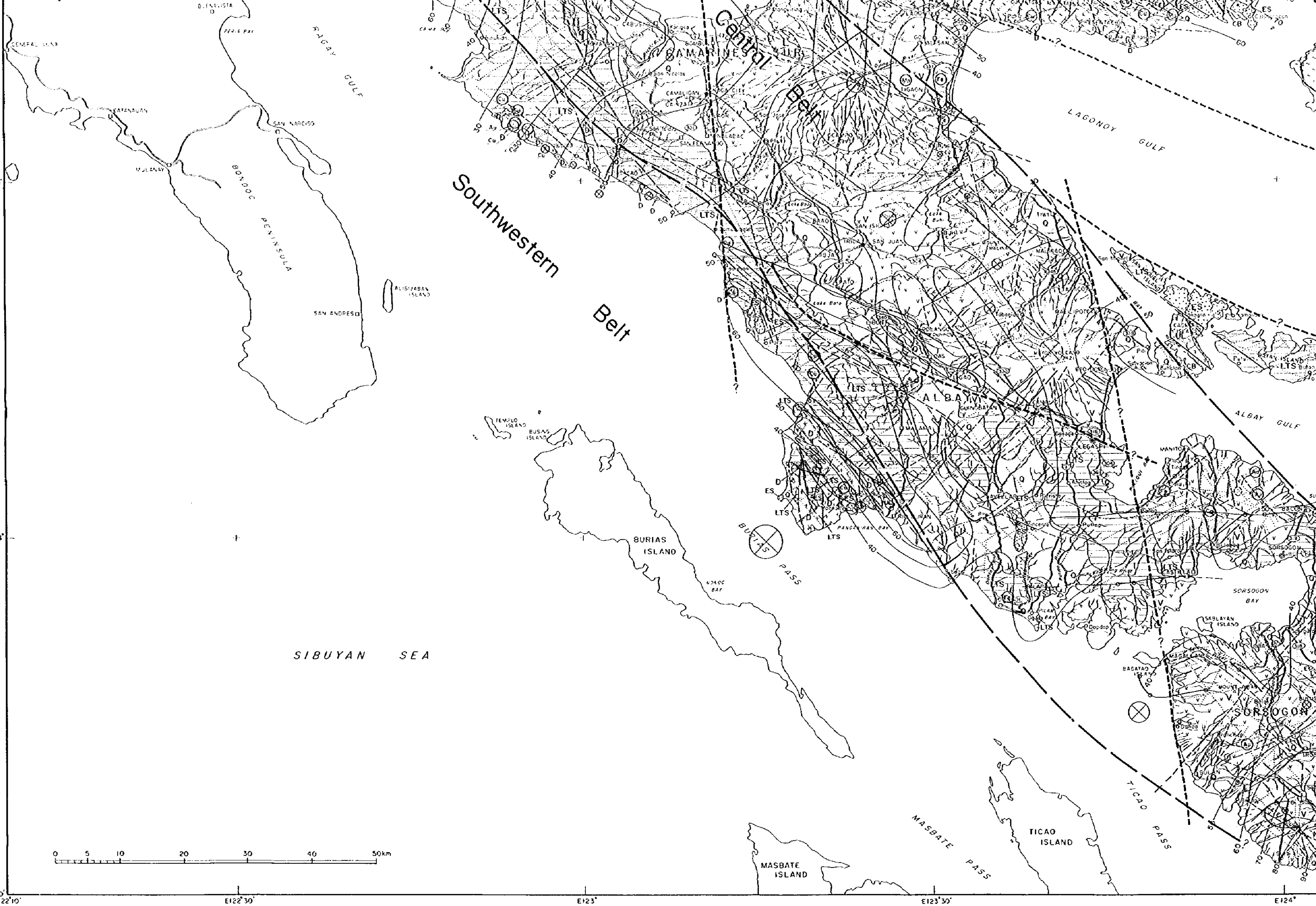
- Q — Alluvial, Quarternary sediments
- V V V — Pliocene ~ Pleistocene Volcanic rocks
- LTS — Late Tertiary Sediments & Volcanics
- ES — Eocene Sediments
- CB — Schists, Sediments } Cretaceous Basements
- UL — Ultramafic rocks }
- D — Oligocene ~ Miocene Diorite Intrusives

Metallic Mineral Resources

- Au — Ore deposits, Prospects, Geochemical anomalies of the element

Lineaments

- Lineament : clear



Central Belt
Southwestern Belt
CAMARINES SUR
ALBAY
SORSOGON
RAGAY GULF
BONDOC PENINSULA
GENERAL LUNA
CATANAUAN
MULANAY
SAN NARCISO
SAN ANDRES
ALISIJABAN ISLAND
LAGONOY GULF
ALBAY GULF
SORSOGON BAY
SABLAYAN ISLAND
BAGATAO ISLAND
TEMPLO ISLAND
BUSING ISLAND
BURIAS ISLAND
BURIAS PASS
SIBUYAN SEA
TICAO ISLAND
TICAO PASS
MASBATE PASS
MASBATE ISLAND
CAMALIGAN
SAN FERNANDO
LEGASPI
MANITO
TIWI
MALINAO
TABACO
BACON
BULAN
N13°30'
N13°
N12°30'
E122°10'
E122°30'
E123°
E123°30'
E124°
0 5 10 20 30 40 50km

LEGEND

- Chartered city
- City capital of province
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- UL — Ultramafic rocks
  } Cretaceous Basements
- D — Oligocene ~ Miocene Diorite Intrusives

Metallic Mineral Resources

- Au — Ore deposits, Prospects, Geochemical anomalies of the element

Lineaments

- Lineament : clear
- Lineament :
- Lineament : un clear

Aero magnetic anomaly (by World Bank)

- magnetic anomaly
- L — plane low response
- H — plane high response
- low linear response
- linear structure

Gravity

- 60 — Bouguer contour (milligal)

Central Belt

Western Belt

LAGONOY GULF

ALBAY GULF

SORSOGON BAY

BURIAS PASS

MASBATE PASS

TICAO PASS

SAN BERNARDINO STRAIT

BURIAS ISLAND

MASBATE ISLAND

TICAO ISLAND

SABLAYAN ISLAND

CALINTAAN ISLAND

CAMARINES SUR

ALBAY

SORSOGON

N13°30'

N13°

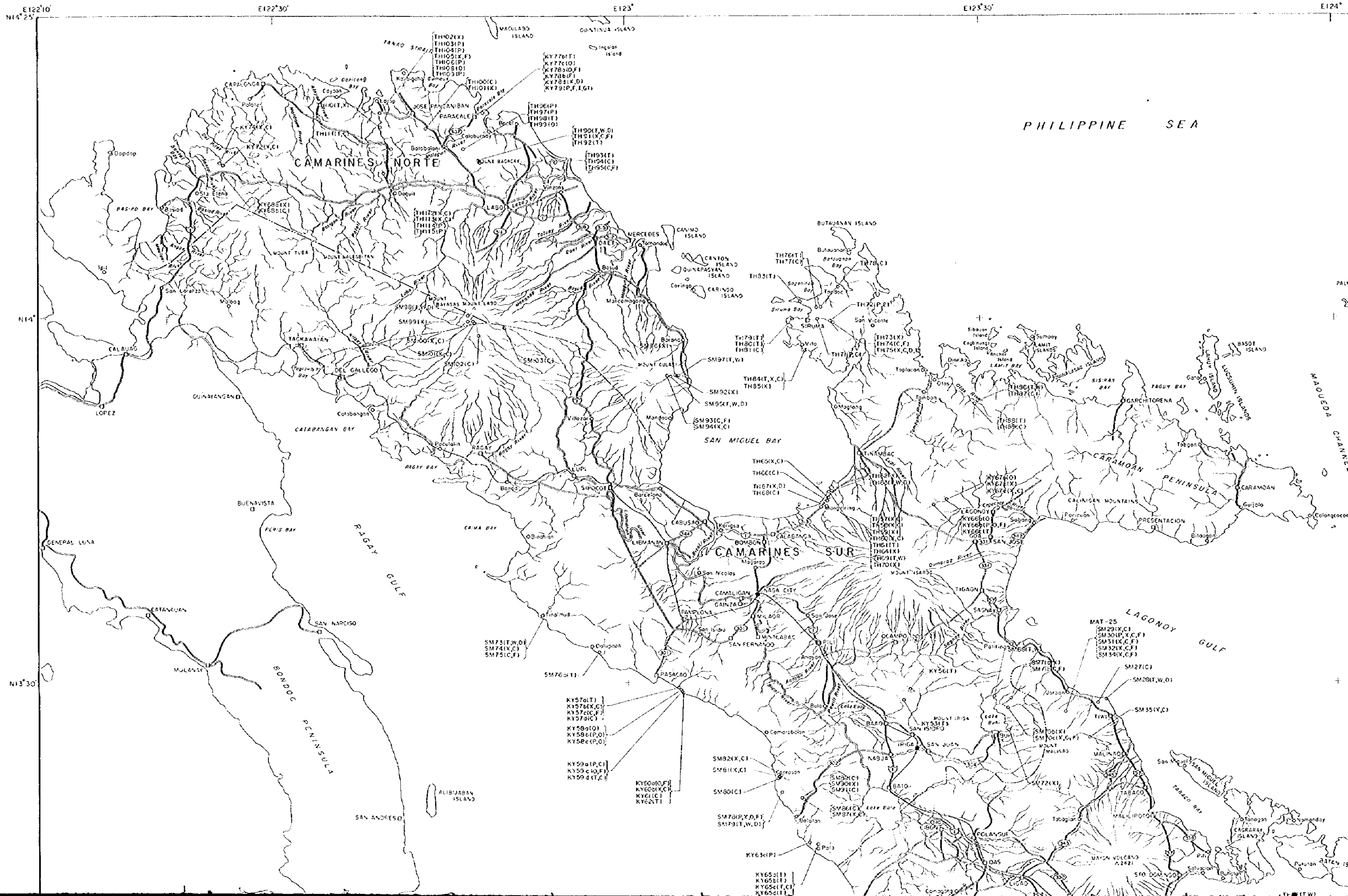
N12°30'

E123°

E123°30'

E124°

E124°15'


E122°10'
N14°25'
E122°30'
E123°
E123°30'
E124°
N14°
N13°30'
PHILIPPINE SEA
CAMARINES NORTE
CAMARINES SUR
SAN MIGUEL BAY
RAGAY GULF
LAGONOY GULF
BONDOC PENINSULA
CARAMOAN PENINSULA
MAQUEDA CHANNEL
TANAO STRAIT
MACULABO ISLAND
QUINTINUA ISLAND
Ingalan Island
TH102(X)
TH103(P)
TH104(P)
TH105(X,F)
TH106(P)
TH108(O)
TH109(P)
TH100(C)
TH101(X)
KY77b(T)
KY77c(O)
KY78a(O,F)
KY78b(F)
KY78d(K,D)
KY79(P,F,I,GT)
TH96(P)
TH97(P)
TH98(T)
TH99(O)
TH90(F,W,D)
TH91(X,C,F)
TH92(T)
TH93(T)
TH94(C)
TH95(C,F)
CAPALONGA
Pototan
Caypan
TH110(T,X)
TH111(T,X)
KY74(X,C)
KY72(X,C)
Dapdap
Sta Elena
BASIAD BAY
Basiad
KY68a(X)
KY68b(C)
JOSE PANGANIBAN
PARACALE
Calaburcady
Batobalani
MOUNT BAGACAY
Daguit
LABO
Vinzons
TH112(X,C)
TH113(X,C)
TH114(P)
TH115(P)
MERCEDES
DAET
Tamandoc
Basud
Mancamagong
CANIMO ISLAND
CANTON ISLAND
QUINAPASYAN ISLAND
Caringo
CARINGO ISLAND
BUTAUANAN ISLAND
Butauanan
TH76(T)
TH77(C)
TH78(C)
TH83(T)
Tandoc
Siruma Bay
SIRUMA
TH72(P,2)
San Vicente
TH73(X)
TH74(C,F)
TH75(X,C,D,I)
TH79(T)
TH80(T)
TH81(C)
Vito
TH71(P,C)
TH84(T,X,C)
TH85(X)
Taplacon
Otas
Magtang
Tamban
TH86(T,W)
TH87(C)
TH88(T)
TH89(C)
Sibauan Island
Cagbinunga Island
Anchor Island
Sumaoy
LAMIT ISLANDS
LAMIT BAY
QUINALASAG ISLANDS
SISIRAN BAY
TAGUN BAY
GARCHITORENA
LAHUY ISLAND
LUCSUHIN ISLANDS
Gata
BASOT ISLAND
MOUNT TUBA
MOUNT NALESBITAN
MOUNT BAYABAS
MOUNT LABO
SM98(T,W,D)
SM99(X)
SM100(X,C)
SM101(X,C)
SM102(C)
SM103(C)
SM96(X)
Barang
MOUNT CULASI
SM97(T,W)
SM92(X)
SM95(T,W,D)
Mandao
SM93(C,F)
SM94(X,C)
Villazar
San Lorenzo
Malbog
CALAUAG
LOPEZ
TAGKAWAYAN
Tagkawayan Bay
DEL GALLEGO
GUINAYANGAN
Catabangan
CATABANGAN BAY
Paculatin
RAGAY
RAGAY BAY
Banga
LUPI
SIPOCOT
Barcelona
CAIMA BAY
Binahian
BUENAVISTA
PERIS BAY
GENERAL LUNA
CATANAUAN
SAN NARCISO
MULANAY
ALIBIJABAN ISLAND
SAN ANDRES
CABUSAO
Karigsa
LIBMANAN
BOMBON
CALABANGA
Majjarao
San Nicolas
CAMALIGAN
NAGA CITY
GAINZA
PAMPLONA
MILAOR
San Isidro
MINALABAC
SAN FERNANDO
San Jose
PILI
Anayon
Tinalmud
SM73(T,W,D)
SM74(X,C)
SM75(C,F)
Calupaan
SM76a(T)
PASACAO
KY57a(T)
KY57b(X,C)
KY57c(C,F)
KY57d(C)
KY58a(O)
KY58b(P,O)
KY58c(P,O)
KY59a(P,C)
KY59c(O,F)
KY59d(T,C)
KY60a(O,F)
KY60b(X,C)
KY61(C)
KY62(T)
Camarabcian
SM82(X,C)
SM81(X,C)
Corrasan
SM80(C)
SM78(P,X,D,F)
SM79(T,W,D)
Balatan
KY63c(P)
Pala
KY65a(T)
KY65b(T)
KY65c(T,C)
KY65d(T)
TINAMBAC
TH65(X,C)
TH66(C)
TH67(X,D)
TH68(C)
TH62(X)
TH63(T,W,D)
Mangyiring
TH57(X,C)
TH58(X,C)
TH59(X)
TH60(X,C)
TH61(T)
TH64(X)
TH69(T,W)
TH70(X)
MOUNT ISAROG
KY67a(O)
KY67b(X)
KY67c(X,C)
LAGONOY
KY66a(O)
KY66b(P,O,F)
KY66c(T)
GOA
SAN JOSE
Sabang
CALINIGAN MOUNTAINS
Paricuan
PRESENTACION
Bitaogan
Tabgon
CARAMOAN
Guijalo
Colongcocong
TIGAON
SAGNAY
OCAMPO
Sagnay River
Patitinga
SM68(T,W)
SM71(X)
SM71b(C,F)
KY56(T)
MAT-25
SM29(X,C)
SM30(P,X,C,F)
SM31(X,C,F)
SM32(X,C,F)
SM34(X,C,F)
SM27(C)
SM28(T,W,D)
Joroan
SM35(X,C)
TIWI
Lake Buhi
Buhi
SM70b(X)
SM70c(X,C,F)
MOUNT MALINAO
MALINAO
SM72(X)
Lake Baao
BAAO
MOUNT IRIGA
KY53(T)
SAN ISIDRO
IRIGA
SAN JUAN
NABUA
BATO
SM89(C)
SM90(X)
SM91(C)
SM86(C)
SM87(X,C)
Lake Bato
LIBON
POLANGUI
OAS
LIGAO
Camagong
TABACO
TABACO BAY
San Miguel
SAN MIGUEL ISLAND
Tabagian
MALILIPOT
Tanagan
Namanday
CAGRARAY ISLAND
Pili
MAYON VOLCANO
2421
STO DOMINGO
Salvacion
Buhatan
Putuian
BATAN IS

付図

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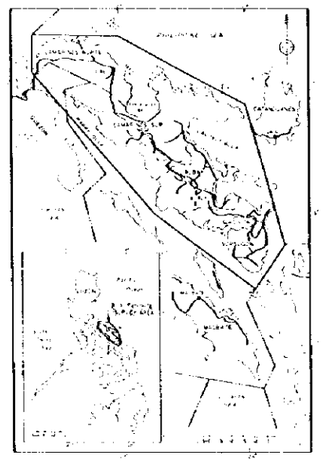


平成 10 年 2 月

Scale 1 : 250,000

0 5 10 15 20km

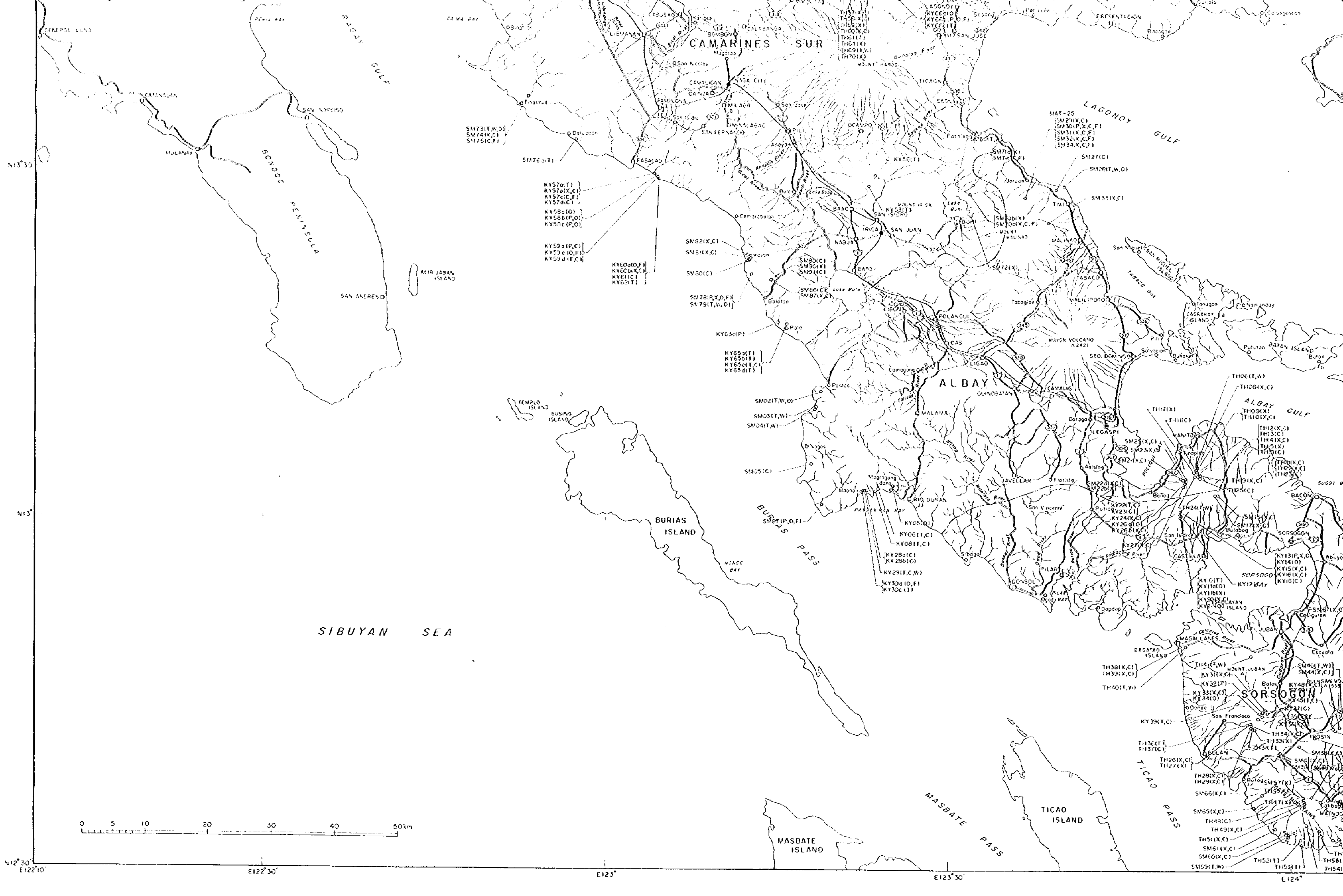
Fig.II-3-40 Location map of samples collected for laboratory studies

LEGEND

- ● Chartered city
- ⑧ City capital of province
- ◎ Capital of province
- □ Municipality or municipal district
- ○ Barangay
- Railroad
- Provincial boundary
- First and second class road
- Route markers : National
- (310) Route markers : Provincial

Rock Sample ○ KY10 (T,P,X,O,C,W,F,D,I,GT)
- Laboratory Tests
- Sample Number
- Sampling Point

- T : Observation of thin section
- P : Observation of polished thin section
- X : X-ray diffraction analysis
- O : Ore grade assay analysis
- C : Chemical analysis for altered/mineralized rocks
- W : Wholerock analysis (major and trace elements)
- F : Fluid inclusion test
- D : K-Ar method age determination



CAMARINES SUR
ALBAY
SORSOGON
RAGAY GULF
LAGONOY GULF
ALBAY GULF
SORSOGON BAY
BONDOC PENINSULA
SIBUYAN SEA
BURIAS ISLAND
BURIAS PASS
MASBATE PASS
TICAO PASS
TICAO ISLAND
MASBATE ISLAND
MAYON VOLCANO
NAGA CITY
LEGASPI
POLANGUI
CASTILLA
SAN NARCISO
MULANAY
SAN ANDRES
N13°30'
N13°
N12°30'
E122°10'
E122°30'
E123°
E123°30'
E124°
0 5 10 20 30 40 50km

LEGEND

- Chartered city
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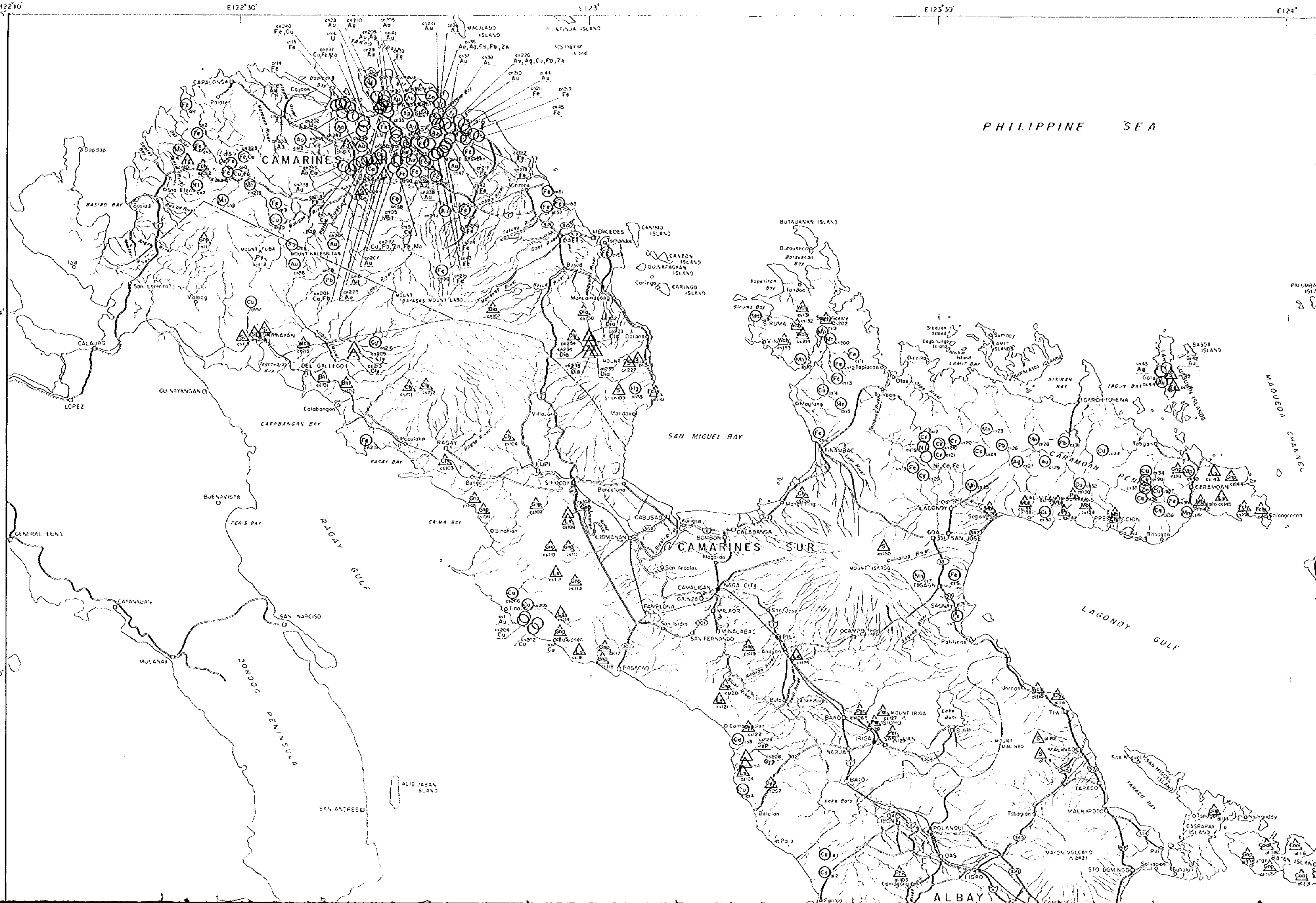
- O : Ore grade assay analysis
- C : Chemical analysis for altered/mineralized rocks
- W : Wholerock analysis (major and trace elements)
- F : Fluid inclusion test
- D : K-Ar method age determination
- I : Stable isotope analysis
- GT : Geothermometer analysis



E122°10'
E122°30'
E123°
E123°30'
E124°
N14°25'
N14°
N13°30'
PHILIPPINE SEA
CAMARINES NORTE
CAMARINES SUR
ALBAY
SAN MIGUEL BAY
RAGAY GULF
LAGONOY GULF
MAQUEDA CHANNEL
BONDOC PENINSULA
CARAMOAN PENINSULA
CALAUAG
LOPEZ
GUINAYANGAN
GENERAL LUNA
CATANAUAN
MULANAY
SAN NARCISO
BUENAVISTA
SAN ANDRES
DEL GALLEGO
RAGAY
LUPI
DAET
MERCEDES
CAPALONGA
LIBMANAN
CABUSAO
CALABANGA
BOMBON
NAGA CITY
MILAOR
MINALABAC
PILI
OCAMPO
PASACAO
SAN FERNANDO
BAAO
IRIGA
NABUA
BATO
LIBON
POLANGUI
OAS
LIGAO
TABACO
MALINAO
TIWI
MALILIPOT
STO DOMINGO
SAGNAY
TIGAON
GOA
SAN JOSE
LAGONOY
TINAMBAC
SIRUMA
PRESENTACION
CARAMOAN
GARCHITORENA
MOUNT ISAROG
MOUNT IRIGA
MAYON VOLCANO
BUTAUANAN ISLAND
CANIMO ISLAND
CARINGO ISLAND
ALIBIJABAN ISLAND
SAN MIGUEL ISLAND
CAGRARAY ISLAND
BATAN ISLAND
BASOT ISLAND
LAMIT ISLAND

付図

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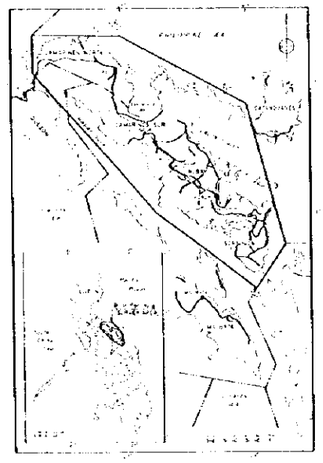


平成 10 年 2 月

Scale 1 : 250,000

0 5 10 15 20km

Fig.I-3-7 Location map of ore deposits, mineral showings, and geochemical anomaly in the Bicol Area

LEGEND

- Chartered city
- City capital of province
- Capital of province
- Municipality or municipal district
- Barangay
- Railroad
- Provincial boundary
- First and second class road
- Route markers : National
- Route markers : Provincial

Keys

prospects

- Metallic Mineral Resources
- Non-Metallic Mineral Resources

metallic resources

Ag	Silver
Al	Aluminum
Au	Gold
Co	Cobalt
Cr	Chromium
Cu	Copper
Fe	Iron
Hg	Mercury
Mn	Manganese
Mo	Molybdenum
Ni	Nickel
Pz	Lead
U	Uranium

CAMARINES SUR

ALBAY

SORSOGON

SIBUYAN SEA

BONDOC PENINSULA

BURIAS ISLAND

TICAO ISLAND

MASBATE ISLAND

SAN ANDRESES

ALIBIJARAS ISLAND

TEMPLO ISLAND

BUSIAG ISLAND

BAGATAO ISLAND

SABLAYAN ISLAND

CABRARAY ISLAND

BATAN ISLAND

LAGONOY GULF

ALBAY GULF

BURIAS PASS

MASBATE PASS

TICAO PASS

MAYON VOLCANO

MOUNT IRIGA

MOUNT MALINAO

MOUNT ISAROG

0 5 10 20 30 40 50km

N13°30'

N13°

N12°30'

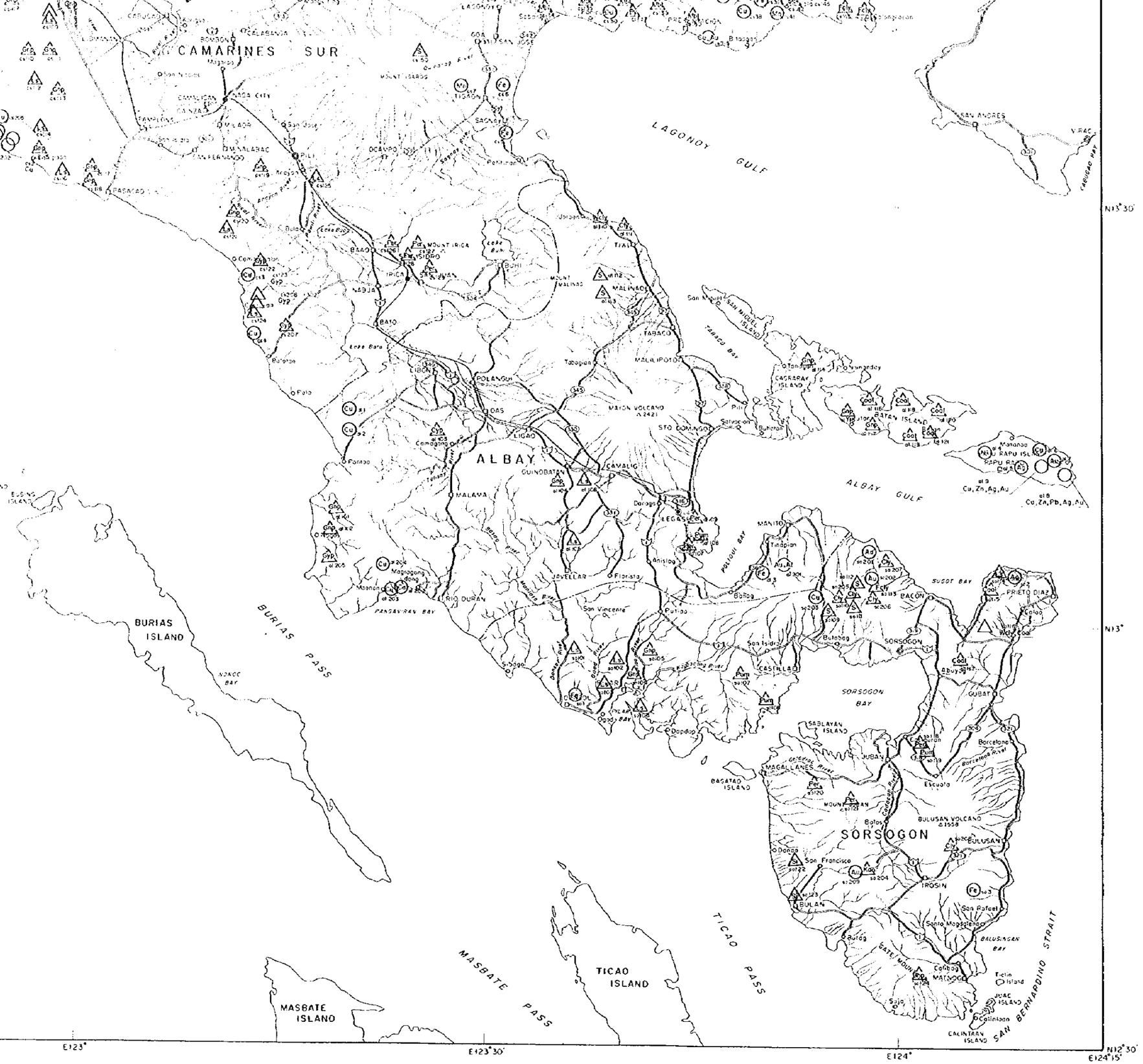
E122°10'

E122°30'

E123°

E123°30'

E124°



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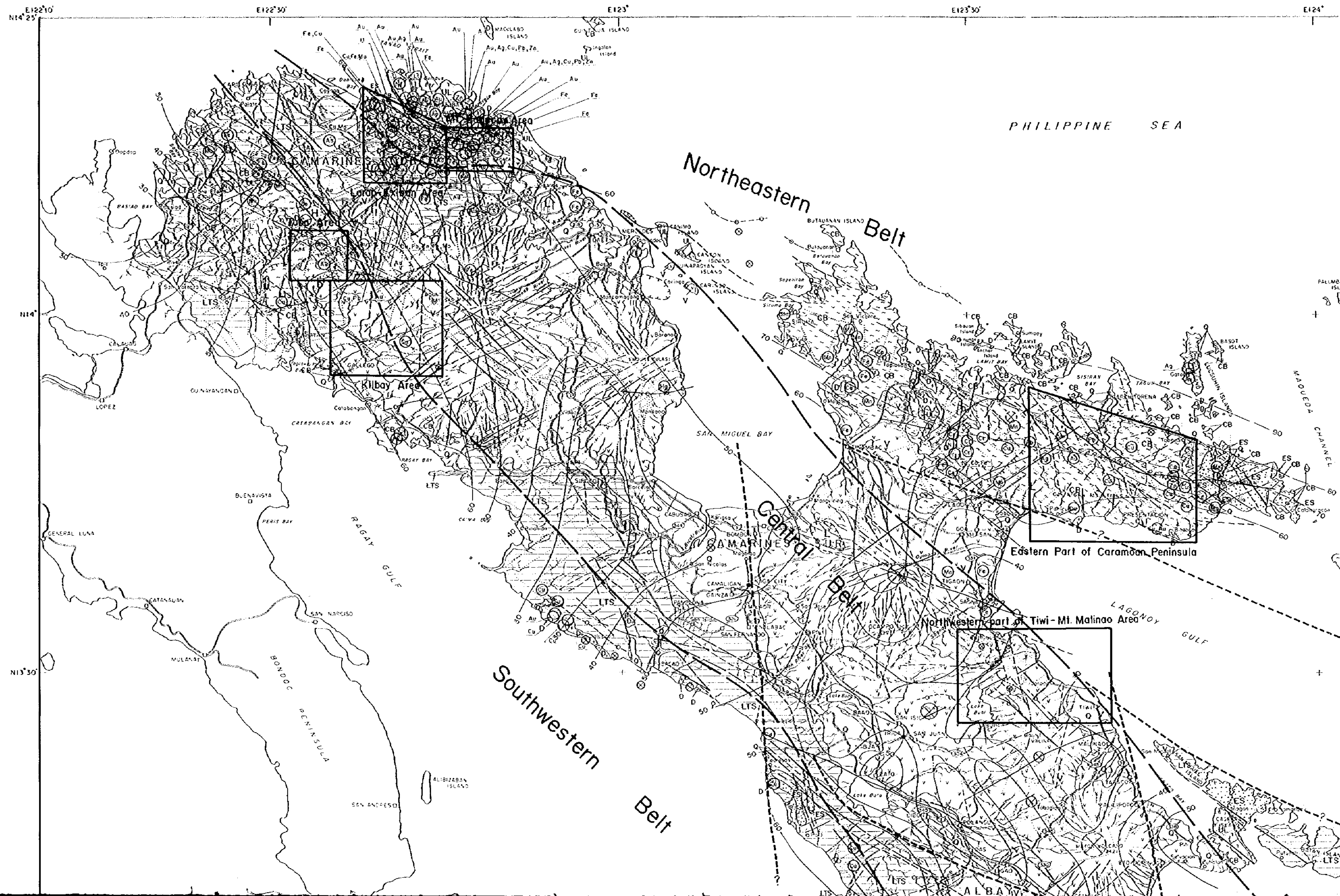
Hg	Mercury
Mn	Manganese
Mo	Molybdenum
Ni	Nickel
Pz	Lead
U	Uranium
Zn	Zinc

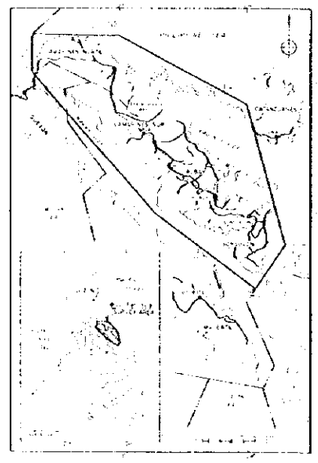
non-metallic resources

Bnt	Bentonite
Cchy	China Clay
Cly	Clay
Cool	Coal
Dia	Diatomaceous Earth
Fcly	Flint Clay
Fd	Feldsper
Gnp	Guano-Phosphate
Gyp	Gypsum
Kao	Kaoline
Ls	Limestone
Mbl	Marble
Per	Perlite
Pum	Pumice
Py	Pyrite
S	Sulfur
Si	Silica
Wcly	White Clay


E122°10'
E122°30'
E123°
E123°30'
E124°
N14°25'
N14°
N13°30'
PHILIPPINE SEA
Northeastern Belt
Central Belt
Southwestern Belt
Kilbay Area
Eastern Part of Caramoan Peninsula
Northwestern part of Tiwi-Mt. Malinao Area
SAN MIGUEL BAY
RAGAY GULF
LAGONOY GULF
MAQUEDA CHANNEL
BONDOC PENINSULA
CAMARINES SUR
RAGAY BAY
BASIAD BAY
CALAUAG
LOPEZ
GUINAYANGAN
CATANAUAN
SAN NARCISO
MULANAY
SAN ANDRES
BUENAVISTA
GENERAL LUNA
ALIBIJABAN ISLAND
BASOT ISLAND
PERIS BAY
CALABANGAN BAY

付図

平成９年度 資源開発協力基礎調査
鉱 物 資 源 広 域 調 査
フィリピン共和国ビコール地域



平成 10 年 2 月

Scale 1 : 250,000

0 5 10 15 20km

Fig.II-5-4 Candidate Areas for the Second Phase Survey

LEGEND

- Chartered city
- City capital of province
- Capital of province
- Municipality or municipal district
- Barangay
- Railroad
- Provincial boundary
- First and second class road
- Route markers : National
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Geology

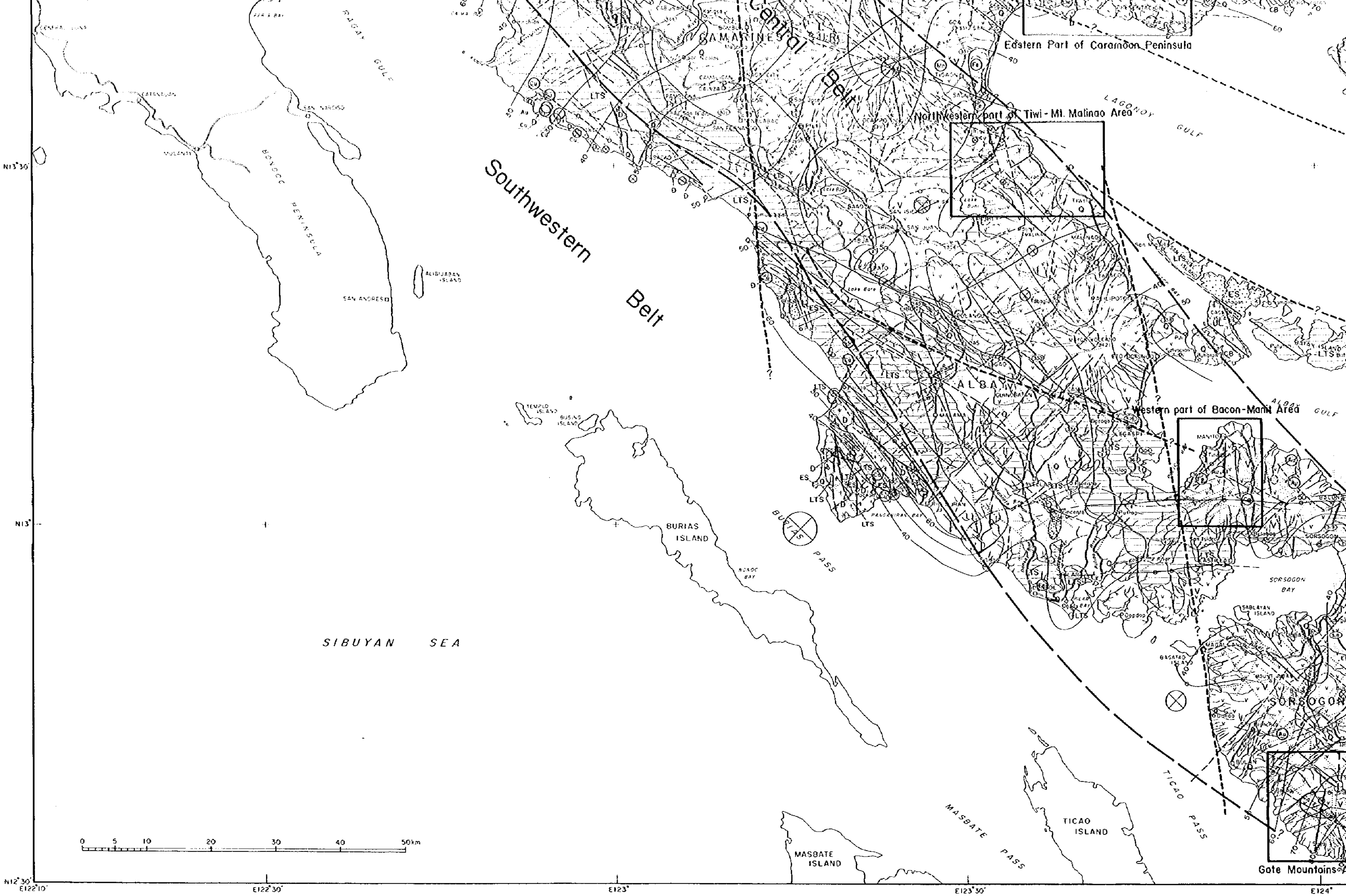
- Q — Alluvial, Quarternary sediments
- V — Pliocene ~ Pleistocene Volcanic rocks
- LTS — Late Tertiary Sediments & Volcanics
- ES — Eocene Sediments
- CB — Schists, Sediments
- UL — Ultramafic rocks
- } Cretaceous Basements
- D — Oligocene ~ Miocene Diorite Intrusives

Metallic Mineral Resources

- Au — Ore deposits, Prospects, Geochemical anomalies of the element

Lineaments

- Lineament : clear



Central Belt
Southwestern Belt
Eastern Part of Caramoan Peninsula
Northwestern part of Tiwi - Mt. Malinao Area
Western part of Bacon-Manit Area
Gate Mountains
LAGONOY GULF
ALBAY GULF
RAGAY GULF
BONDOC PENINSULA
ALIBIJABAN ISLAND
SAN ANDRES
BURIAS ISLAND
BURIAS PASS
SIBUYAN SEA
MASBATE ISLAND
MASBATE PASS
TICAO ISLAND
TICAO PASS
SORSOGON BAY
SORSOGON
ALBAY
CAMARINES SUR
N13°30'
N13°
N12°30'
E122°10'
E122°30'
E123°
E123°30'
E124°
0 5 10 20 30 40 50km

Eastern Part of Caramoan Peninsula

Northwestern part of Tiwi - Mt. Malinao Area

Western part of Bacon-Manit Area

Gate Mountains Area

Central Belt

Western Belt

CAMARINES SUR

ALBAY

SORSOGON

LAGONOY GULF

ALBAY GULF

SORSOGON BAY

BURIAS ISLAND

BURIAS PASS

MASBATE ISLAND

MASBATE PASS

TICAO ISLAND

TICAO PASS

SAN BERNARDINO STRAIT

SABLAYAN ISLAND

ALINTAAN ISLAND

N13°30'

N13°

N12°30'

E123°

E123°30'

E124°

E124°15'

- Chartered city
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- ES — Eocene Sediments
- CB — Schists, Sediments
- UL — Ultramafic rocks
  (CB, UL: Cretaceous Basements)
- D — Oligocene ~ Miocene Diorite Intrusives

Metallic Mineral Resources

- Au — Ore deposits, Prospects, Geochemical anomalies of the element

Lineaments

- Lineament : clear
- Lineament :
- Lineament : un clear

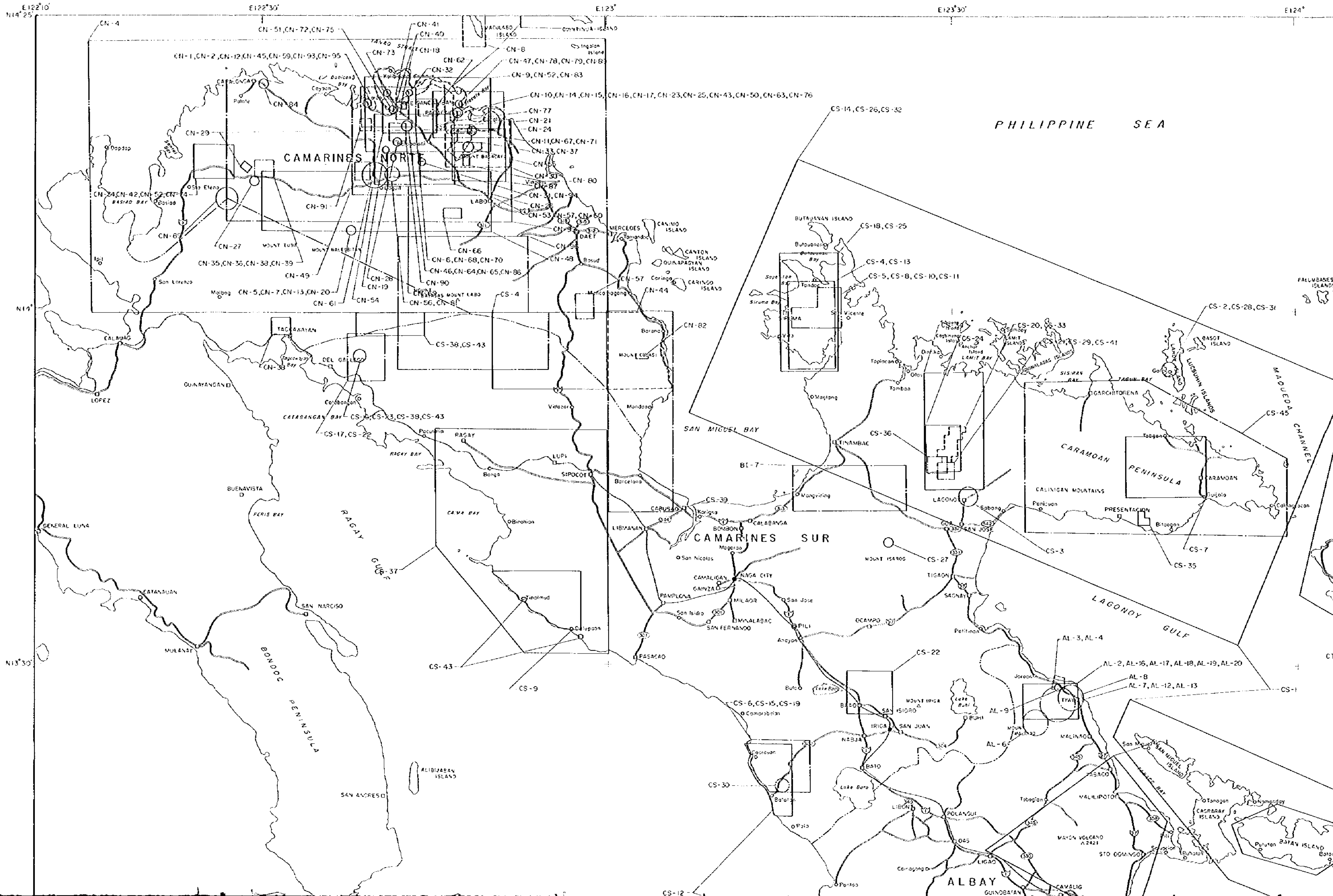
Aero magnetic anomaly (by World Bank)

- magnetic anomaly
- L — plane low response
- H — plane high response
- low linear response
- linear structure

Gravity

- 60 — Bouguer contour (milligal)

Candidate Areas for the second phase survey



E122°10'
N14°25'
E122°30'
E123°
E123°30'
E124°
N14°
N13°30'
PHILIPPINE SEA
CAMARINES NORTE
CAMARINES SUR
ALBAY
SAN MIGUEL BAY
LAGONOY GULF
RAGAY GULF
BONDOC PENINSULA
CARAMOAN PENINSULA
MAQUEDA CHANNEL
RAGAY BAY
CATABANGAN BAY
CAIMA BAY
CN-4
CN-51, CN-72, CN-75
CN-41
CN-40
CN-1, CN-2, CN-12, CN-45, CN-59, CN-93, CN-95
CN-73
CN-18
CN-8
CN-62
CN-32
CN-47, CN-78, CN-79, CN-81
CN-9, CN-52, CN-83
CN-10, CN-14, CN-15, CN-16, CN-17, CN-23, CN-25, CN-43, CN-50, CN-63, CN-76
CN-77
CN-21
CN-24
CN-11, CN-67, CN-71
CN-33, CN-37
CN-80
CN-84
CN-29
CN-91
CN-27
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CN-49
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CN-54
CN-28
CN-19
CN-66
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CN-46, CN-64, CN-65, CN-86
CN-90
CN-48
CN-57
CN-44
CN-82
CN-53
CN-57, CN-60
CS-4
CS-38, CS-43
CS-14, CS-26, CS-32
CS-18, CS-25
CS-4, CS-13
CS-5, CS-8, CS-10, CS-11
CS-2, CS-28, CS-31
CS-20, CS-33
CS-24
CS-29, CS-41
CS-45
CS-36
CS-39
CS-3
CS-7
CS-35
CS-27
CS-17, CS-22
CS-37
CS-43
CS-9
CS-22
CS-6, CS-15, CS-19
CS-30
CS-12
CS-1
BI-7
AL-3, AL-4
AL-2, AL-16, AL-17, AL-18, AL-19, AL-20
AL-8
AL-7, AL-12, AL-13
AL-9
AL-6
CALAUAG
LOPEZ
GUINAYANGAN
TAGKAWAYAN
DEL GALLEGO
GENERAL LUNA
BUENAVISTA
CATANAUAN
MULANAY
SAN NARCISO
SAN ANDRES
ALIBIJABAN ISLAND
RAGAY
LUPI
SIPOCOT
DAET
MERCEDES
LABO
VINZONS
CANIMO ISLAND
CANTON ISLAND
QUINAPAGYAN ISLAND
CARINGO ISLAND
BUTAUANAN ISLAND
MOUNT LABO
MOUNT ISAROG
MOUNT IRIGA
MAYON VOLCANO
TINAMBAC
LAGONOY
GOA
SAN JOSE
GARCHITORENA
CARAMOAN
PRESENTACION
CALINIGAN MOUNTAINS
LIBMANAN
CABUSAO
BOMBON
CALABANGA
NAGA CITY
CAMALIGAN
GAINZA
PAMPLONA
MILAOR
MINALABAC
SAN FERNANDO
PILI
OCAMPO
TIGAON
SAGNAY
PASACAO
BAAO
IRIGA
SAN JUAN
NABUA
BATO
BUHI
TIWI
MALINAO
TABACO
MALILIPOT
LIGAO
POLANGUI
LIBON
OAS
GUINOBATAN
CAMALIG
STO DOMINGO
SAN MIGUEL ISLAND
CAGRARAY ISLAND
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LUCSUHIN ISLANDS
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BARCELONA
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付図

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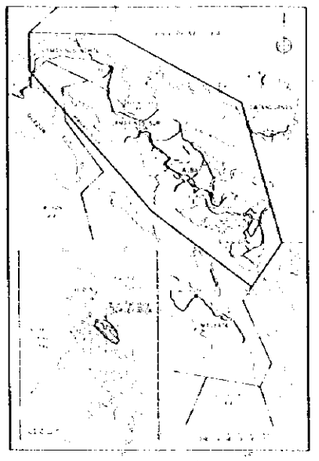


平成 10 年 2 月

Scale 1 : 250,000

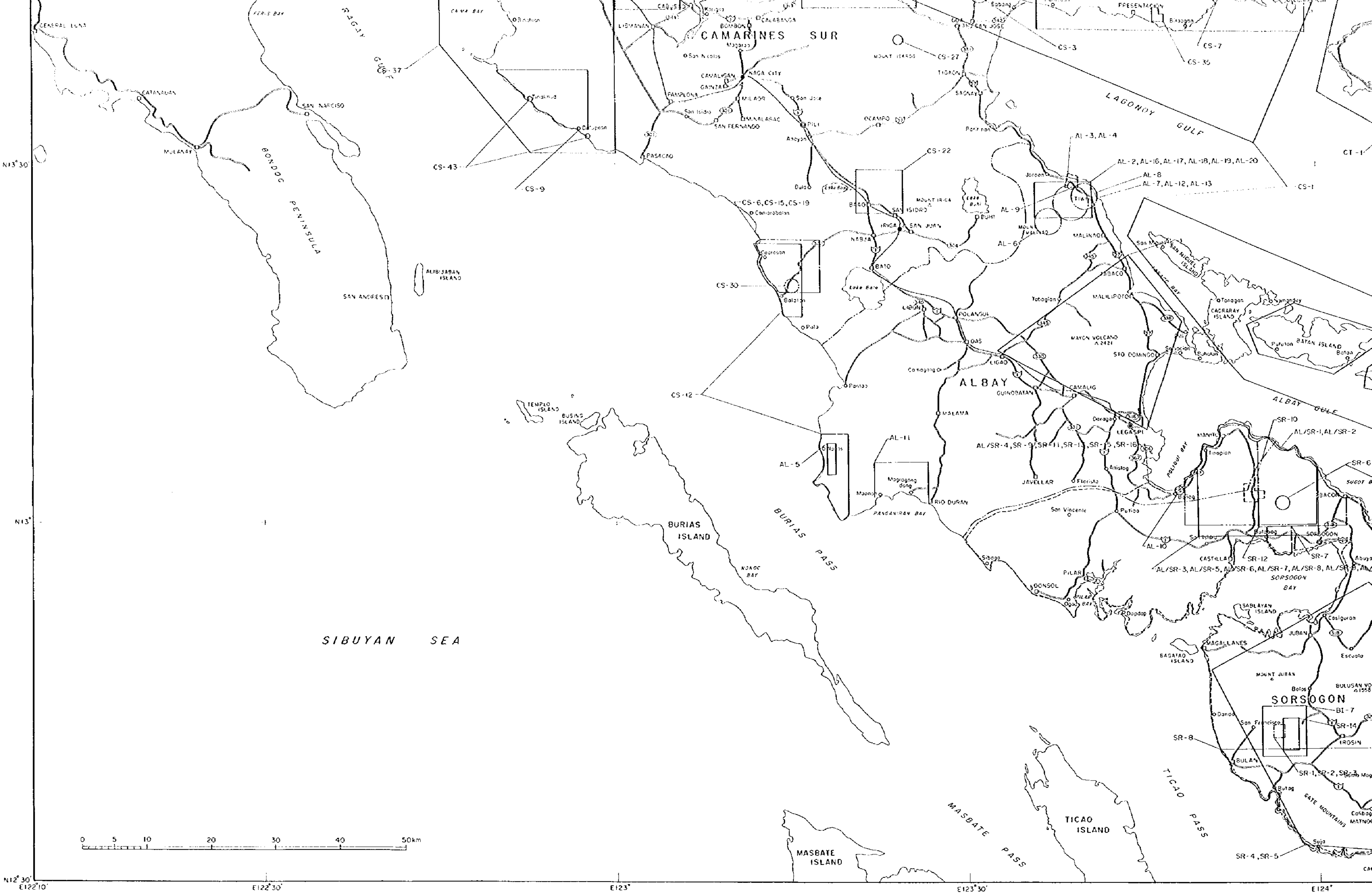
0 5 10 15 20km

Fig.II-1-1 Index map of the existing literature

LEGEND

- ● Chartered city
- ◉ City capital of province
- ◎ Capital of province
- □ Municipality or municipal district
- ○ Barangay
- Railroad
- Provincial boundary
- First and second class road
- Route markers : National
- Route markers : Provincial

CN－: Camarines Norte
CS－: Camarines Sur
AL－: Albay
SR－: Sorsogon
AL/SR－: Albay and Sorsogon
CT－: Catanduanes Island
BI－: Bicol Region



CAMARINES SUR
NAGA CITY
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CS-37
CS-43
CS-9
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CS-35
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AL-3, AL-4
AL-2, AL-16, AL-17, AL-18, AL-19, AL-20
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AL-9
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AL-11
AL-5
AL-10
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AL/SR-1, AL/SR-2
AL/SR-3, AL/SR-5, AL/SR-6, AL/SR-7, AL/SR-8
SR-10
SR-6
SR-12
SR-7
SR-8
SR-14
SR-1, SR-2, SR-3
SR-4, SR-5
BI-7
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SORSOGON BAY
IROSIN
BULAN
TICAO ISLAND
TICAO PASS
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MASBATE ISLAND
0 5 10 20 30 40 50km
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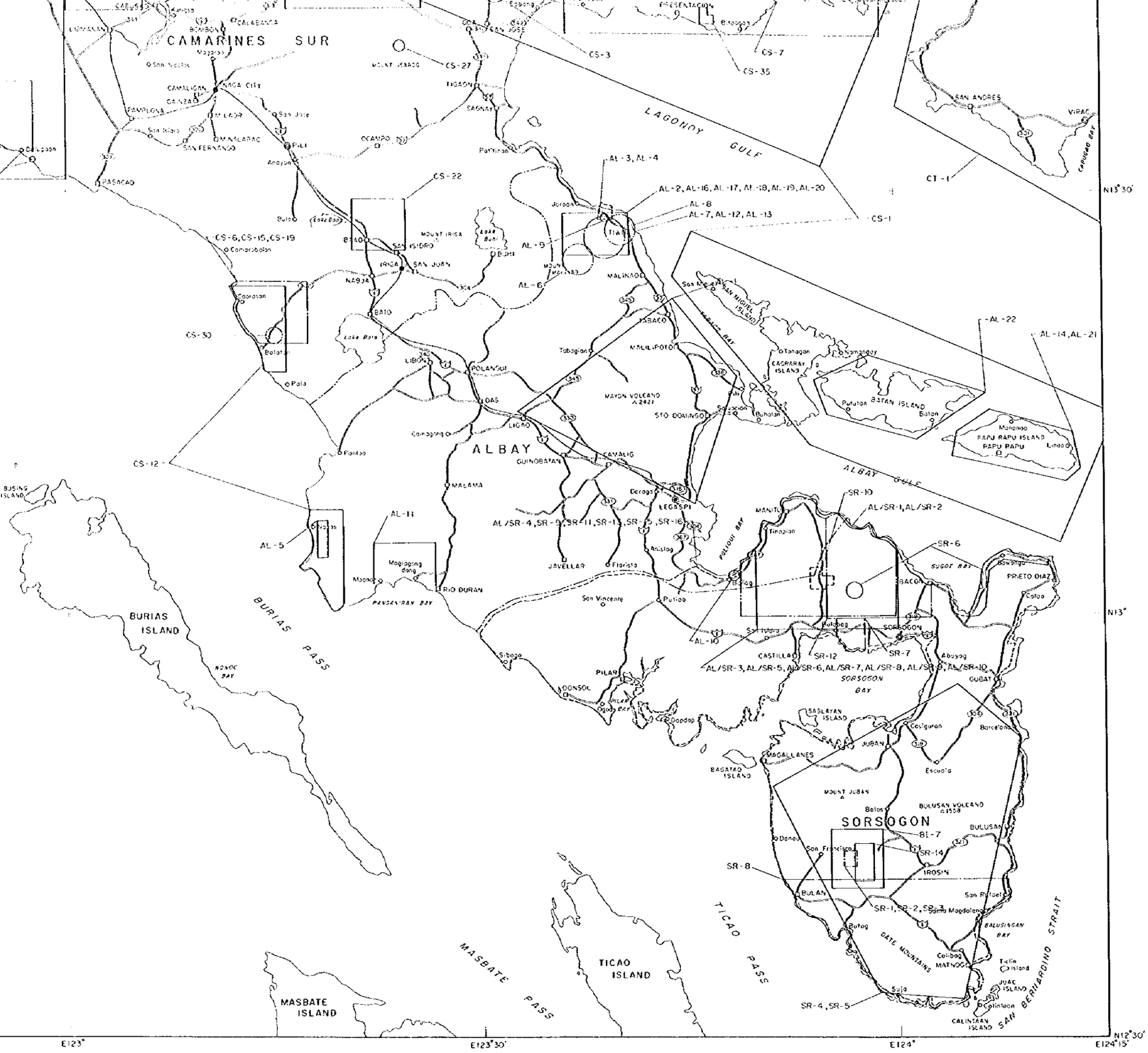

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