396 Yellow Sea
397 China
398 Ryukyu (=Loo Choo, = Lu-Chu, =Liu-Chiu)
399 [Boreal Pacific and Atlantic]
400 [Tropical Atlantic Ocean]
401 Mindelo quadrant, 15-30° N, 15-30° W or eastward to Africa, 200+ m
402 Atlantis quadrant, 15-30° N, 30-45° W, 200+ m
403 Vema quadrant, 15-30° N, 45-60° W, 200+ m
404 Sargasso quadrant, 15-30° N, 60-75° W but only east of Caribbean islands, 200+ m
405
406 Venezuela quadrant, 09-21° N, 61-83° W, but always south and west of Greater Antilles and north and east of American continent
407 Tortugas quadrant, 20-31° N, 82-100° W, 200+ m
408 Leone quadrant, 0-15° N, 15-30° W, 200+ m
409 Doldrum (Demerara) quadrant, 0-15° N, 30-45° W, 200+ m
410 [Atlantic Eurylatitudinal]
411 Guyana (Demerara) quadrant, 0-15° N, 45-60° W, 200+ m
412 Guinea quadrant, 0-15° S, 15° E-0°, 200+ m
413 Chain quadrant, 0-15° S, 0-15° W, 200+ m
414 Romanche (Chain) quadrant, 0-15° S, 15-30° W, 200+ m
415 Rocas (Pernambuco) quadrant, 0-15° S, 30-45° W, 200+ m
416 Valdivia quadrant, 15-30° S, 15° E-0°, 200+ m
417 Trade (Rio Grande) quadrant, 15-30° S, 0-15° W, 200+ m
418 Ridge (Almeida Columbia) quadrant, 15-30° S, 15-30° W, 200+ m
419 Hotspur (Santos) quadrant, 15-30° S, 30-51° W, 200+ m
420 [Cosmopolitan marine]
421 [Pantropical]
422 [Marine Cosmopolitan in latitudes below 60°]
423 [Cosmopolitan in latitudes below 45°]
424 [North Atlantic]
425 [South Atlantic]
426 [North and South Atlantic]
427 [Tropical to Boreal E. Atlantic]
428
429
430 [Islands of the South Atlantic]
431 St. Peter-St. Paul
432
433 Ascension
434 St. Helena
435 [Tropical East Atlantic]
436
437 Martin Vaz
438
439 Fernando de Noronha
440 [West Africa]
441 Senegal
442 Canaries
443 Cape Verde
444 Liberia

445 Nigeria
446 Sao Tome (Santo Antonio) (Principe)
447 Gabon
448 [Gulf of Guinea, 445, 446, 447, 449]
449 Angola
450 [East South America]
451
452
453
454
455 Maranho
456
457
458 Surinam
459
460 [Caribbean Region]
461
462 Bonaire
463
464 Maracaibo
465 Cartagena
466 Colon
467
468
469
470 [Tropical West Atlantic]
471 Yucatan
472
473 Vera Cruz
474 Texas
475
476 Gulf
477
478 Florida
479
480 [Gulf of Mexico]
481 Bahama
482
483 Cuba
484 Cayman
485
486 Jamaica
487
488 Haiti
489 Puerto Rico (and Virgin Islands)
490 [West Atlantic-East Pacific controlled by Isthmus]
491 Leeward
492
493
494
495
496

497
498
499
500 [Pacific Ocean]
501 Balboa quadrant, 0-15° N, 75-90° W but west of America, 200+ m
502 Ecuador quadrant, 0-15° S, 47-90° W, 200+ m
503 Nazca quadrant, 15-30° S, 70-90° W, 200+ m
504 Guatemala quadrant, 0-20° N, 90-105° W, 200+ m
505 Fernandina quadrant, 0-15° S, 90-105° W, 200+ m
506 Current quadrant, 15-30° S, 90-105° W, 200+ m
507 Fracture quadrant, 0-15° N, 105-120° W, 200+ m
508 Counter quadrant, 0-15° S, 105-120° W, 200+ m
509 Pascua quadrant, 15-30° S, 105-120° W, 200+ m
510 [North Pacific]
511 Clarion quadrant, 0-15° N, 120-135° W, 200+ m
512 Mohotani quadrant, 0-15° S, 120-135° W, 200+ m
513 Ducie quadrant, 15-30° S, 120-135° W, 200+ m
514 Pacific quadrant, 0-15° N, 135-150° W, 200+ m
515 Hatuta quadrant, 0-15° N, 135-150° W, 200+ m
516 Gambier quadrant, 15-30° S, 135-150° W, 200+ m
517 Fanning quadrant, 0-15° N, 150-165° W, 200+ m
518 Danger (Manikiki) quadrant, 0-15° S, 150-165° W, 200+ m
519 Hervey quadrant, 15-30° S, 150-165° W, 200+ m
520 [South Pacific]
521 Wilder (Tablemount) quadrant, 0-15° N, 165-180° W, 200+ m
522 Baker quadrant, 0-15° S, 165°W -180, 200+ m
523 Capricorn quadrant, 15-30° S, 165° W-180°, 200+ m
524 Keats quadrant, 0°-15° N, 180°-165° E, 200+ m
525 Vitjaz quadrant, 0°-15° S, 180°-165° E, 200+ m
526 Conway quadrant, 15-30° S, 180°-165° E, 200+ m
527 Truk quadrant, 0°-15° N, 165-150° E, 200+ m
528 Rennell quadrant, 0°-15° S, 165-150° E, 200+ m
529 Barrier quadrant, 15-30° S, 165-150° E, 200+ m
530
531 Yap quadrant, 0°-15° N, 150-135° E, 200+ m but south to New Guinea
532 Reef quadrant, 0°-15° S, 150-135° E, 200+ m but south to Australia
533
534
535 [East Pacific eurylatitudinal]
536
537 Acapulco
538
539 Nicaragua
540 [East Tropical Pacific]
541 Panama
542 Cocos
543 Malpelo
544 Perlas
545 Gorgona
546 Galapagos

547
548 Nino
549 Clipperton
550 [Mid Tropical Pacific]
551 Easter (and Sala Gomez)
552
553 Pitcairn (and Henderson)
554 Marquesas
555 [South Tropical Pacific]
556 Tuamotu
557
558 Austral (Tubai)
559 Society (Tahiti)
560 [Polynesia]
561 Flint
562 Malden
563 Palmyra
564 Jarvis
565
566 Cook (N)
567 Rarotonga (Cook S)
568 Baker (and Howland)
569
570 [West Pacific eurylatitudinal]
571 Phoenix
572 Tokelu
573 Samoa
574 Nive
575 Tonga
576 Fiji
577 Ellice
578 Gilbert (and Kingsmill)
579 Marshall
580 [Micronesia]
581 Ralik (Marshall)
582 Eniwetok
583 Kusaie
584 Nauru
585 Hebrides (New)
586 Caledonia (and Loyalty)
587 Coral (Sea Islands)
588 Norfolk
589 Howe (Lord)
590 [Melanesia]
591 Carolines (Ifaluk)
592 Solomons
593 Marianas (Guam)
594 Palau
595 Bismarck
596
597 New Guinea
598

599
600 [Indo-Pacific]
601 Davao quadrant, 0°-15° N, 135-120° E, 200+ m
602 Banda quadrat, 0°-15° S, 135-120° E, 200+ m
603 Siam quadrant, 0°-15° N, 120-105° E, 200+ m
604 Sunda quadrant, 0°-15° S, 120-105° E, 200+ m
605 Shark (Exmouth) quadrant, 15-30° S, 120-105° E, 200+ m
606 Malacca quadrant, 0°-15° N, 105-90° E, 200+ m
607 Keeling quadrant, 0-15° S, 105-90° E, 200+ m
608 Wharton (Broken) quadrant, 15-30° S, 105-90° E, 200+ m
609 Bengal quadrant, 0°-15° , 90-75° E, 200+ m
610
611 India quadrant, 0°-15° S, 90-75° E, 200+ m
612 Central (Ninetyeast) quadrant, 15-30° S, 90-75° E, 200+ m
613 Arabian quadrant, 15-25° N, 75-60° E, 200+ m
614 Carlsberg quadrant, 0-15° N, 75-60° E, 200+ m
615 Equatorial quadrant, 0-15° S, 75-60° E, 200+ m
616 Mascarene quadrant, 15-30°S, 75-60° E, 200+ m
617 Somali quadrant, 0-15° N, 60-45° E, 200+ m
618 Farquar (Amirante) quadrant, 0-15° S, 60-45° E to Africa, 200+ m
619 Malagasy quadrant, 25-30° S, 60-45° E, 200+ m
620
621 Channel quadrant, 15-30° S, 45-30° E, 200+ m
622
623
624
625 [Southern Indian Ocean]
626
627
628
629
630 [Tropical Australia]
631 Brisbane
632
633 Barrier
634 Carpinteria
635 [Australia to Southeast Asia]
636
637 Arnhem
638 Broome
639
640 [Greater Indonesia]
641 Philippine (including most of Sulu Sea)
642 Celebes
643 Molucca
644 Ceram
645 [Australia to Indonesia]
646 Flores (and Iles Paternoster = Tengah or Tenggaja)
647 Borneo
648 Java
649 Sumatra

650 [Southeast Asia]
651 Taiwan
652 Macao
653 Darien
654 Hainan
655 Viet Nam
656 Siam
657 Malaya
658 Christmas
659 Keeling
660 [Indian Ocean]
661 Martaban (West Malaya)
662 Andaman (and Nicobar)
663 Burma
664 Madras
665 Ceylon
666 Mysore
667 Maldive
668 Chagos
669
670 [Indian Subcontinent]
671 Indus
672 Oman
673 Persian
674 Muscat
675 Aden
676 Sokotra (Abd-el-Kuri)
677 Red
678 Moga
679
680 [East Africa]
681 Kenya
682
683 Tanzania (Zanzibar)
684
685 [Tropical Indian Ocean and Red Sea]
686 Mozambique
687
688
689
690 [West Indian Ocean]
691 Seychelles
692 Agalega
693 Aldabra
694 Comoro
695 Cargados
696 Rodriguez
697 Mauritius (and Reunion)
698 Madagascar
699
700 [South Warm Temperate]
701 Cape quadrant, 30-45° S, 30-15° E, 200+ m

Agulhas quadrant, 30-45° S, 15° E-0°, 200+ m
Zenker quadrant, 30-45° S, 0-15° W, 200+ m
Grande quadrant, 30-45° S, 15-30° W, 200+ m
Argentine quadrant, 30-45° S, 30-45° W, 200+ m
Plata quadrant, 30-45° S, 45-65° W, 200+ m
Concepcion quadrant, 30-45° S, 70-90° W, 200+ m
Chile quadrant, 30-45° S, 90-105° W, 200+ m
Cordillera (Challenger) quadrant, 30-45° S, 105-120° W, 200+ m

Oeno quadrant, 30-45° S, 120-135° W, 200+ m
El Tanin quadrant, 30-45° S, 135-150° W, 200+ m
Legouve (Orne) quadrant, 30-45° S, 150-165° W, 200+ m
Pitt quadrant, 30-45° S, 165-180° W, 200+ m
Van Diemen quadrant, 30-45° S, 180-165° E, 200+ m
Tasman (Taupo) quadrant, 30-45° S, 165-150° E, 200+ m
Hobart quadrant, 30-45° S, 150-135° E, 200+ m
Bight quadrant, 30-45° S, 135-120° E, 200+ m
Diamantina quadrant, 30-45° S, 120-105° E, 200+ m

Naturaliste quadrant, 30-45° S, 105-90° E, 200+ m
Horse quadrant, 30-45° S, 90-75° E, 200+ m
Indian quadrant, 30-45° S, 75-60° E, 200+ m
Apotres quadrant, 30-45° S, 60-45° E, 200+ m
Durban (Natal) quadrant, 30-45° S, 45-30° E, 200+ m

[South Atlantic Islands]
Tristan da Cunha

Gough

[southeast Atlantic]

[Southern Africa]
Beira

Natal

Walvis

[East South America]
Uruguay

753 Matias
754
755 [Moved by human means to]
756
757
758
759
760 [East Pacific]
761 Peru
762
763 Atacama
764
765 Santiago
766
767 Chiloe
768 Felix
769 Juan Fernandez
770 [Australasia]
771 Kermadec
772 Chatham
773 Hauraki
774 Cook
775 [New Zealand]
776 Stewart
777 Nelson
778
779 Auckland
780 [Southern Australia]
781 Sydney
782 Victoria
783 Tasmania
784 [southeast Australia]
785 Adelaide
786 Eucla
787 Flinders
788 Perth
789 Shark
790 [Southern Islands]
791 [East Australia]
792 [West Australia]
793 [Circum Australia]
794 [Southwest Australia]
795 Amsterdam (and St. Paul)
796
797 Crozet
798
799 Prince Edward (Marion)
800 [Antarctic-Antiboreal Marine]

801 Weddell quadrant, 55-90° S, 20-60° W, 200+ m; t = South Sandwich Trench
802 Drake quadrant, 55-90° S, 60-100° W, 200+ m

803 Amundsen quadrant, 55-90° S, 100-140° W, 200+ m
804 McMurdo quadrant, 55-90° S, 140-180° W, 200+ m
805 Adelie quadrant, 55-90° S, 180-140° E, 200+ m
806 Wilkes quadrant, 55-90° S, 140-100° E, 200+ m
807 Mawson quadrant, 55-90° S, 100-60° E, 200+ m
808 Olav quadrant, 55-90° S, 60-20° E, 200+ m
809 Maud quadrant, 55-90° S, 20° E-20° W, 200+ m
810 [Antiboreal Islands]
811 Merz (Gough) quadrant, 45-55° S, 0-30° W, 200+ m
812 Shag (Argyro) quadrant, 45-55° S, 30-60° W, 200+ m
813 Horn quadrant, 45-55° S, 60-75° W, 200+ m
814 Mornington quadrant, 45-55° S, 75-90° W, 200+ m
815 Menard quadrant, 45-55° S, 90-120° W, 200+ m
816 Udintsev quadrant, 45-55° S, 120-150° W, 200+ m
817 Maori quadrant, 45-55° S, 150-180° W, 200+ m
818 Iselin quadrant, 45-55° S, 180-150° E, 200+ m
819 Kangaroo quadrant, 45-55° S, 150-120° E, 200+ m
820 Shackleton quadrant, 45-55° S, 120-90° E, 200+ m
821 Leopold quadrant, 45-55° S, 90-60° E, 200+ m
822 Enderby (Ob) quadrant, 45-55° S, 60-30° E, 200+ m
823 Astrid quadrant, 45-55° S, 30-0° E, 200+ m
824
825
826
827
829
830 [Magellan region of South America]
831 Falkland
832
833 South Georgia
834 South Sandwich
835 [Circum-antiboreal]
836 South Orkney
837
838
839
840 [Antiboreal Islands near New Zealand]
841 Antipodes
842 Bounty
843 Auckland
844 Campbell
845 MacQuarie
846
847
848
849 [New Zealand and all antiboreal islands together]
850 [New Zealand and nearby antiboreal islands together]
851 Kerguelen
852 Heard
853
854
855 Bouvet

856
857
858
859
860 [Boreal South America]
861
862 Comodoro
863
864 Magellan
865 [Palmer plus South Georgia]
866 [Boreal South America plus Falkland Islands]
867 [865 plus South Georgia]
868
869
870 [Antarctica]
871 South Shetlands
872 Palmer
873
874 Byrd
875 [Palmer Archipelago and outliers, 870, 871, 872]
876 Ross
877
878 Oates
879
880 [Antarctica and Antiboreal Islands]
881 Shackleton (Gauss Station = 66° S, 89° E)
882
883 Enderby
884
885 Coates
886
887
888
889
890 [Antarctic Islands]
891 Peter
892 Scott
893 Bellamy
894
895
896
897
898
899
900 [Southern Lands, terrestrial and freshwater]
901 [Ethiopian regime]
902
903 Somalia
904
905
906
907
908

South Africa

Madagascar
[Neotropical]
Peru

Pampas

Amazon

Titicaca (Lake)
[New Zealand in general]
North Island
South Island
Stewart

[Notogea]
Tasmania

Victoria
[Tasmania and Southeast Australia together]
[Southern or Warm-Temperate Australia, W and E together]

Perth

[Paleotropica]
Cathay (South China subtropics)
China (Rainforest, part Udvardy 6)
Yunnan (Highlands) (including Yeichih)
Annam (Rainforest, Udvardy 5)
[Indochina in general]
Malaya (Udvardy 7)
Thailand (Udvardy 10)

[Indian Subcontinent]

961 Ganges (Udvardy 3)
962
963 Chota (Udvardy 8)
964 Deccan (Udvardy 11)
965
966
967 Malabar (Udvardy 1) [or Westghat]
968 Thar (Udvardy 15)
969
970 [South Asia]
971 Ceylon (Udvardy 2 and 13)
972
973
974
975
976
077
978
979
980 [Indonesia]
981 Taiwan
982 Philippines
983 Andaman
984 Sumatra
985 Java
986 Borneo
987 Celebes
988 Sunda
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996
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998 New Guinea
999

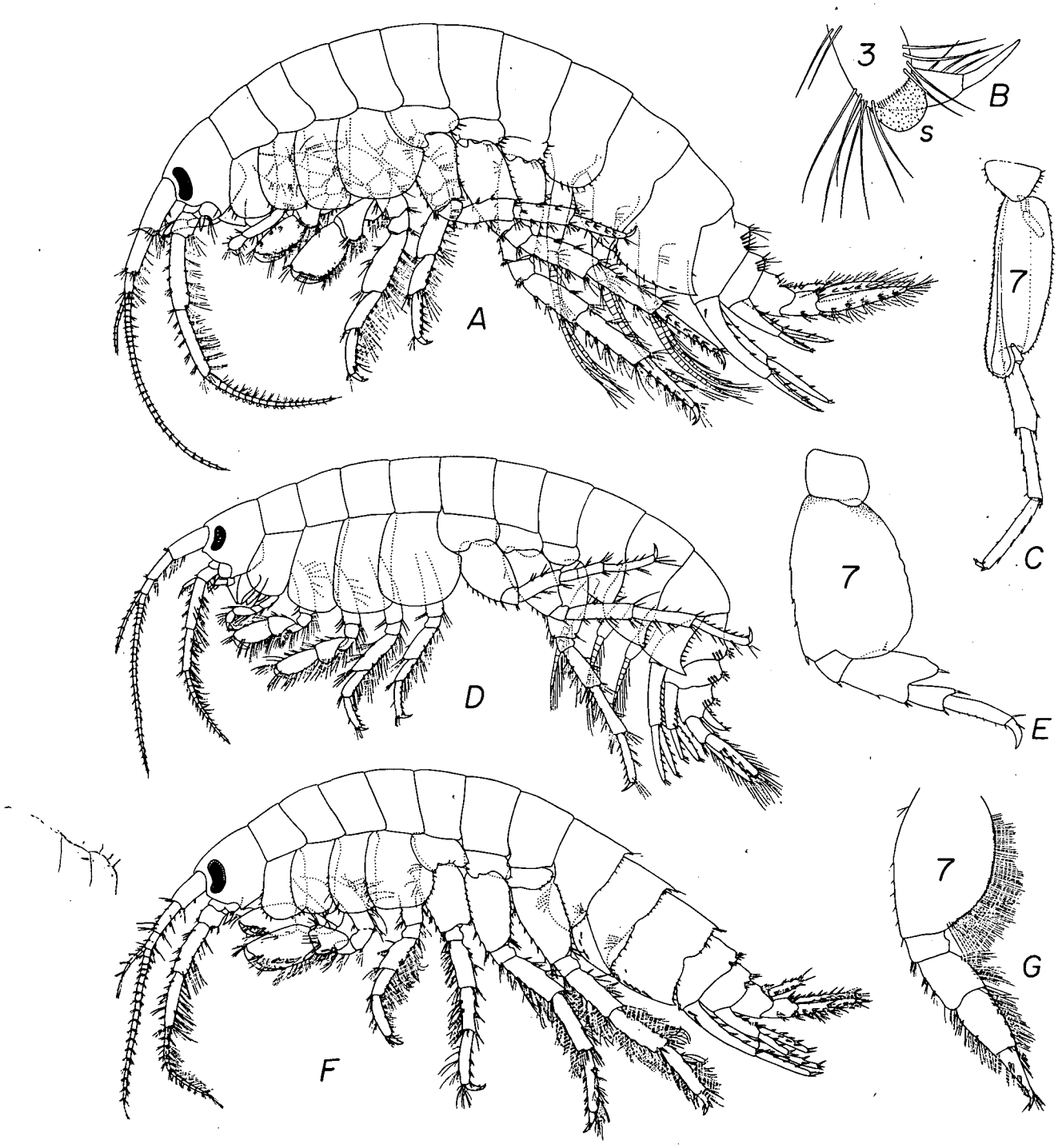


Figure 2. A, Gammarus oceanicus; B, Neoniphargus spenceri; C, Stygobromus pizzinii; D, Gammarus locusta; E, Zernovia volgensis; F, Gammarus mucronatus; G, Pectenogammarus planicrus.

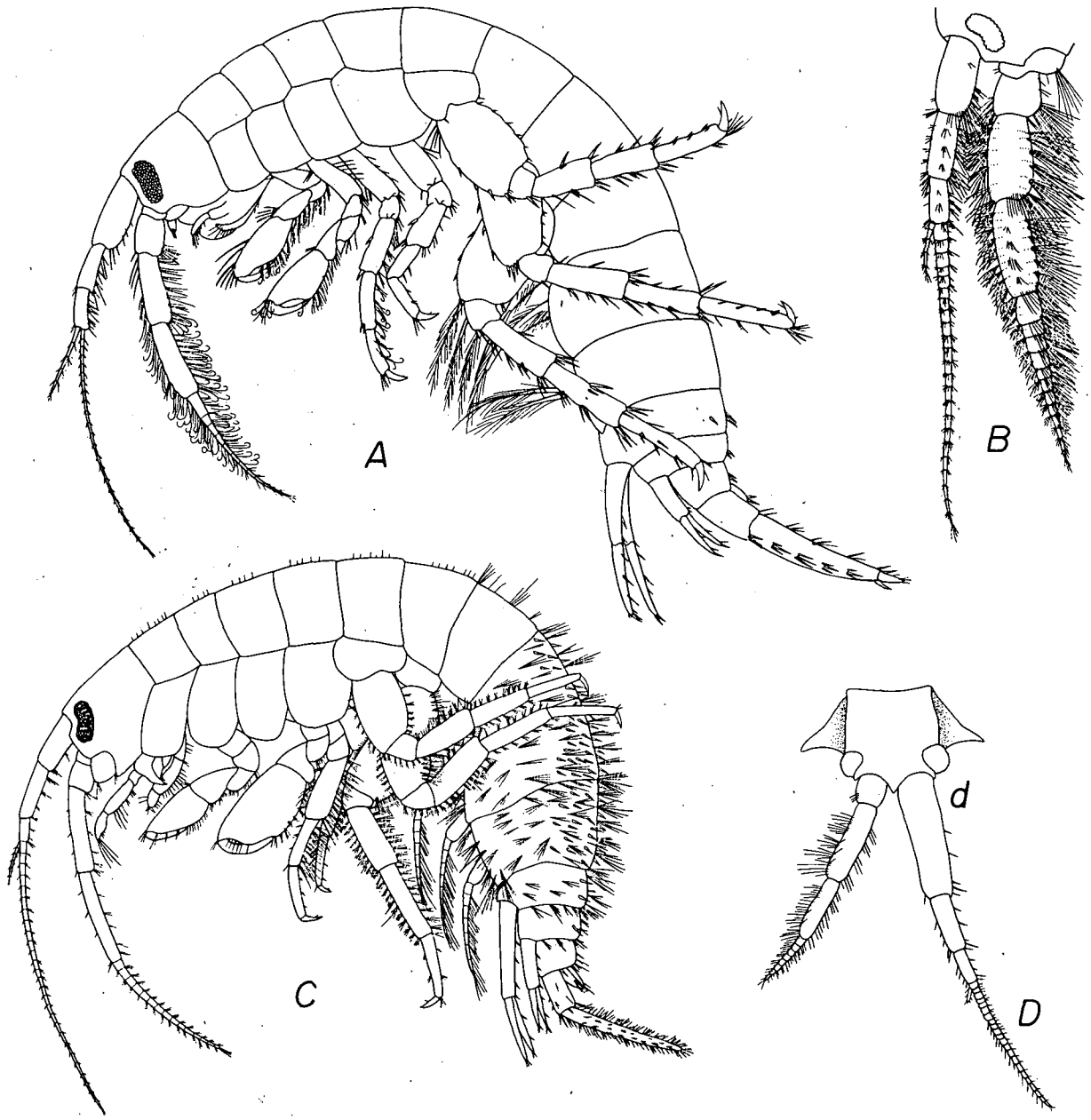


Figure 3. A, Echinogammarus ischnus; B, Echinogammarus roco; C, Echinogammarus berilloni; D, Pallasea cancelloides.

S. Carausu

In 1943, Prof. Carausu published the definitive and classic compilations on the amphipod fauna of the Black Sea.

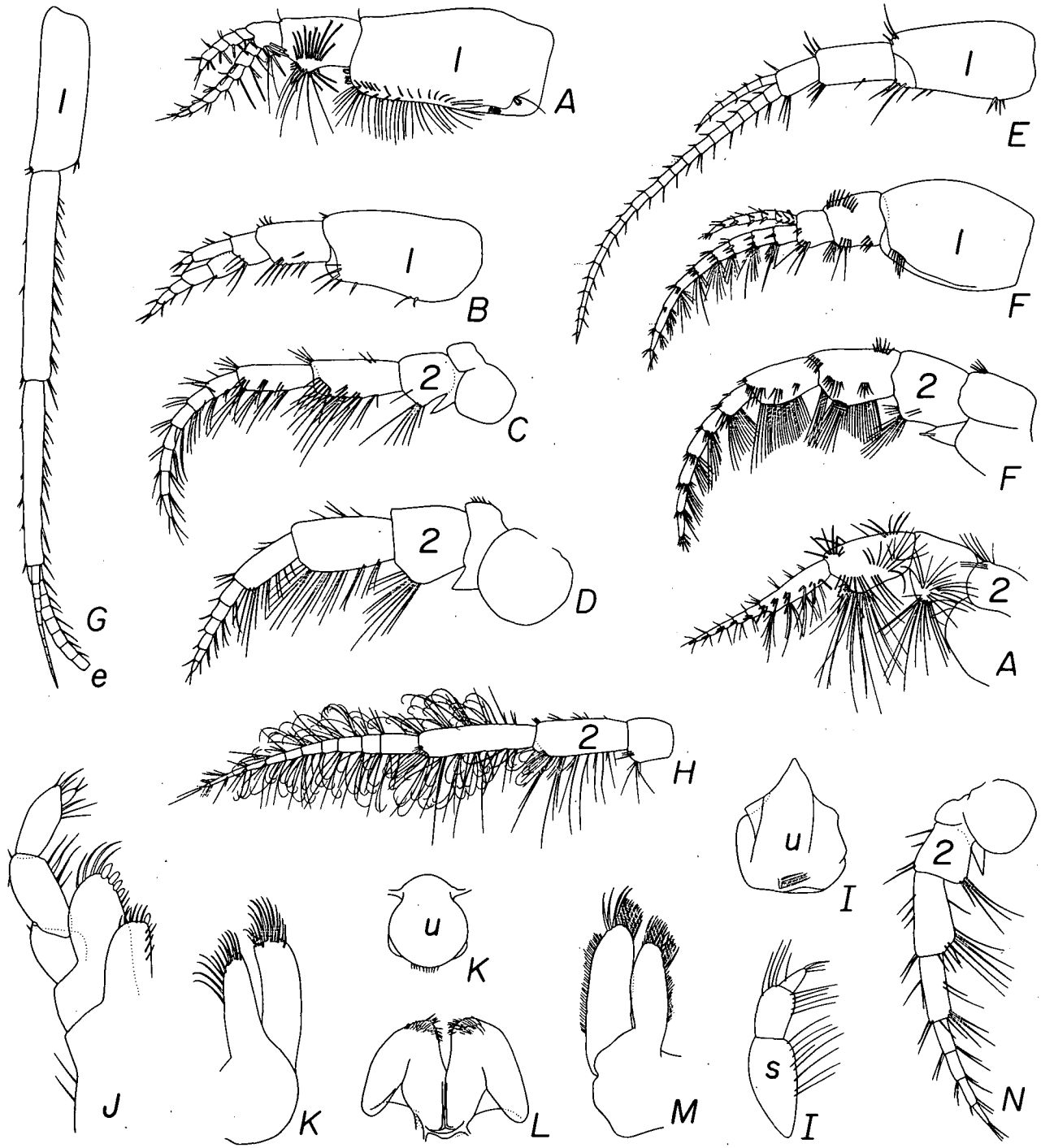


Figure 4. A, Niphargogammarus intermedius; B, Paraniphargoides grimmi; C, Pontogammarus abbreviatus; D, Niphargoides corpulentus; E, Pontogammarus robustoides; F, Euxinia maeotica; G, Sowinskya macrocera; H, Echinogammarus ischnus; I, Beaudettia palmeri; J, Cardiophilus baeri; K, Elasmopus rapax; L, Liagoceradocus lonomaka; M, Paramelita barnardi; N, Stenogammarus deminutus.

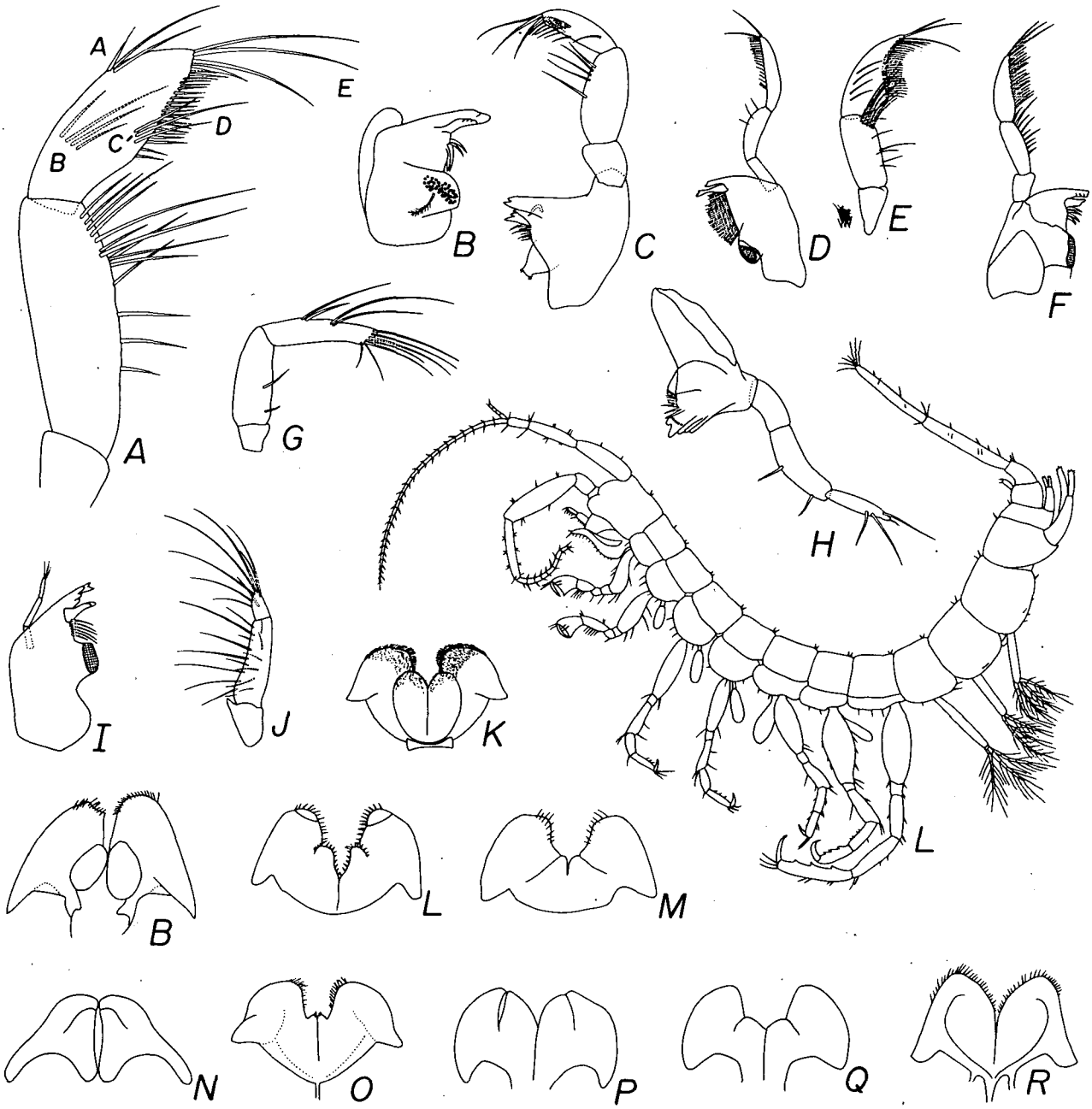


Figure 5. A, Comatogammarus ferghanensis; B, Beaudettia palmeri; C, Kergueleniola macra; D, Niphargopsis legeri; E, Elasmopus bollonsi; F, Elasmopus rapax; G, Niphargogammarus intermedius; H, Pseudingolfiella chilensis; I, Metacrangonyx longipes; J, Ceradocus rubromaculatus; K, Euxinia maeotica; L, Giniphargus pulchellus; M, Sternophysinx filaris; N, Paraniphargus annandalei; O, Axelboeckia spinosa; P, Eriopisella pusilla; Q, Bogidiella bredini; R, Gammarellus homari.

Figure 6

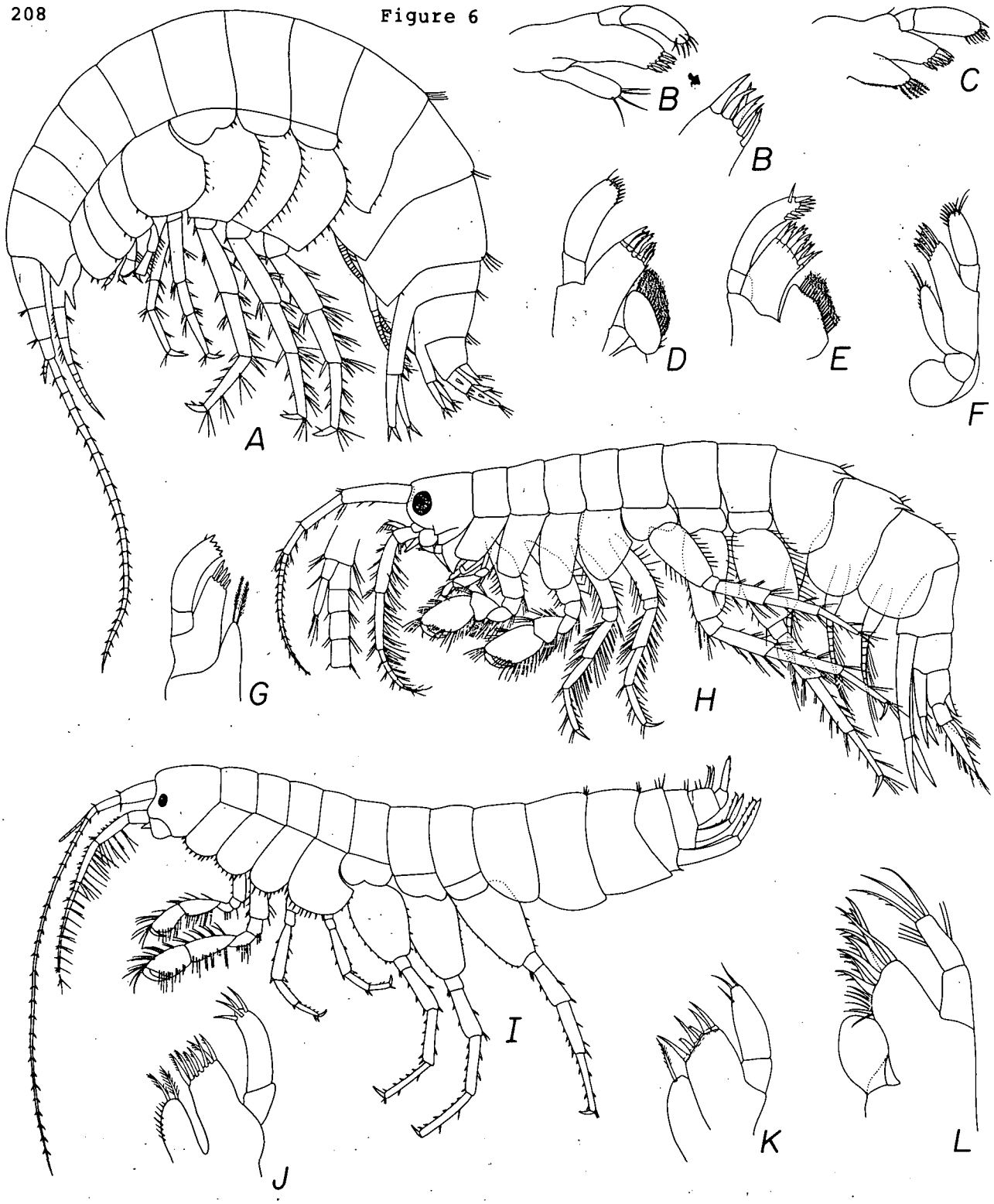


Figure 6. A, Zenkevitchia admirabilis, B, Galapsiellus leleuporum; C, Paramelita barnardi; D, Gammarus pulex; E, Phreatogammarus fragilis; F, Elasmopus rapax; G, Neoniphargus spenceri; H, Pallasiola quadrispinosa; I, Austrogammarus australis; J, Paracrangonyx compactus; K, Kergueleniola macra; L, Pseudingolfiella chilensis.

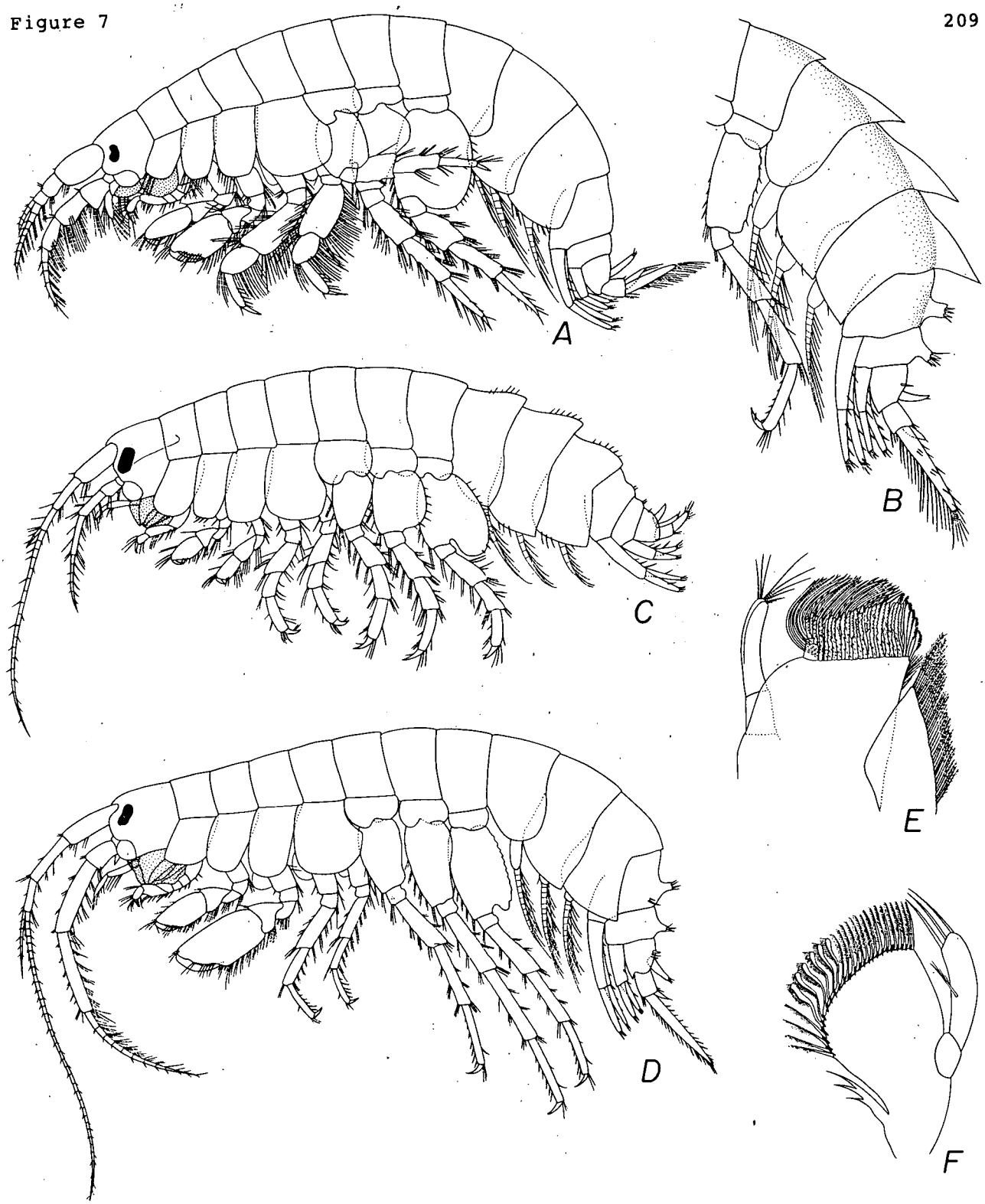


Figure 7. A, Euxinia maeotica; B, Dikerogammarus caspius; C, Amathillina maximovitschi; D, Dikerogammarus oskari; E, Zenkevitchia admirabilis; F, Niphargopsis casparyi.

Figure 8

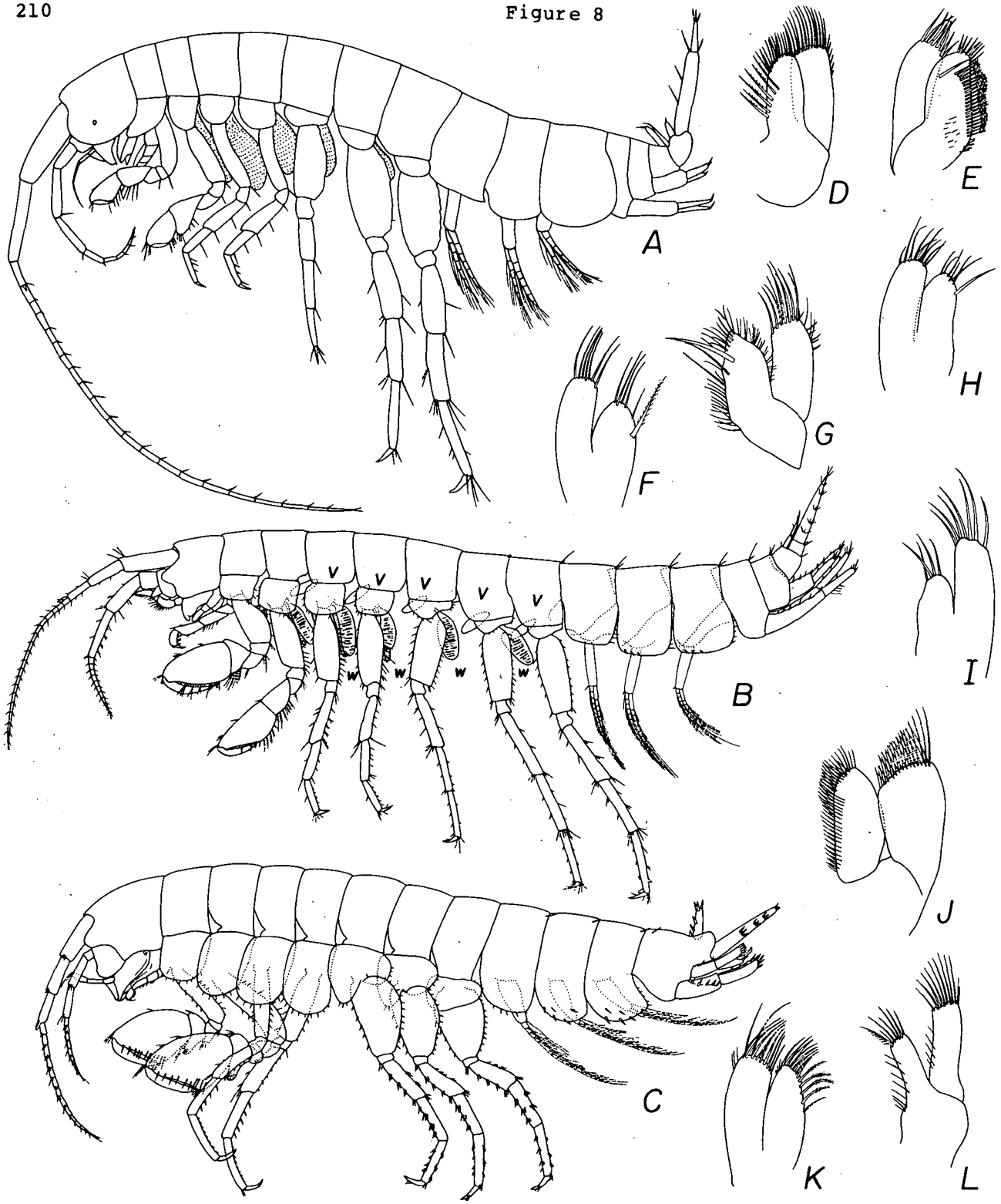


Figure 8. A, Eriopisella pusilla; B, Pseudocrangonyx asiaticus; C, Austroniphargus bryophilus; D, Axelboeckia spinosa; E, Phreatogammarus fragilis; F, Kergueleniola macra; G, Niphargogammarus intermedius; H, Afridiella somala; I, Pseudingolfiella chilensis; J, Longigammarus bruni; K, Melita shimizuii; L, Paracrangonyx compactus.

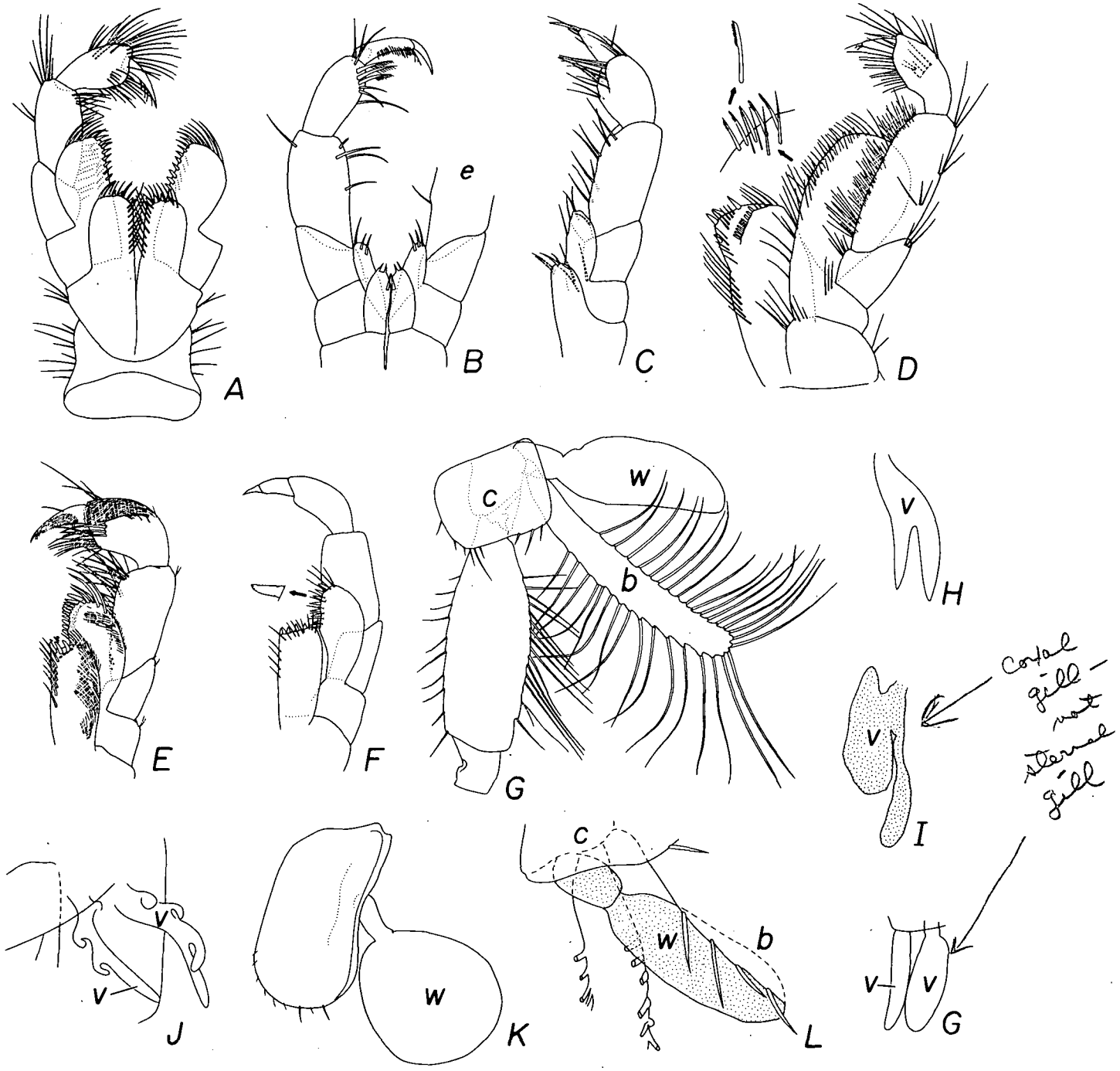


Figure 9. A, Axelboeckia spinosa; B, Pseudingolfiella chilensis; C, Kergueleniola macra; D, Longigammarus bruni; E, Gammarella berringar; F, Neogammarus festae; G, Pseudocrangonyx asiaticus; H, Falklandella obtusa; I, Allocrangonyx hubrichti; J, Neoniphargus obrieni; K, Rotomelita ana; L, Stygobromus elliotti.

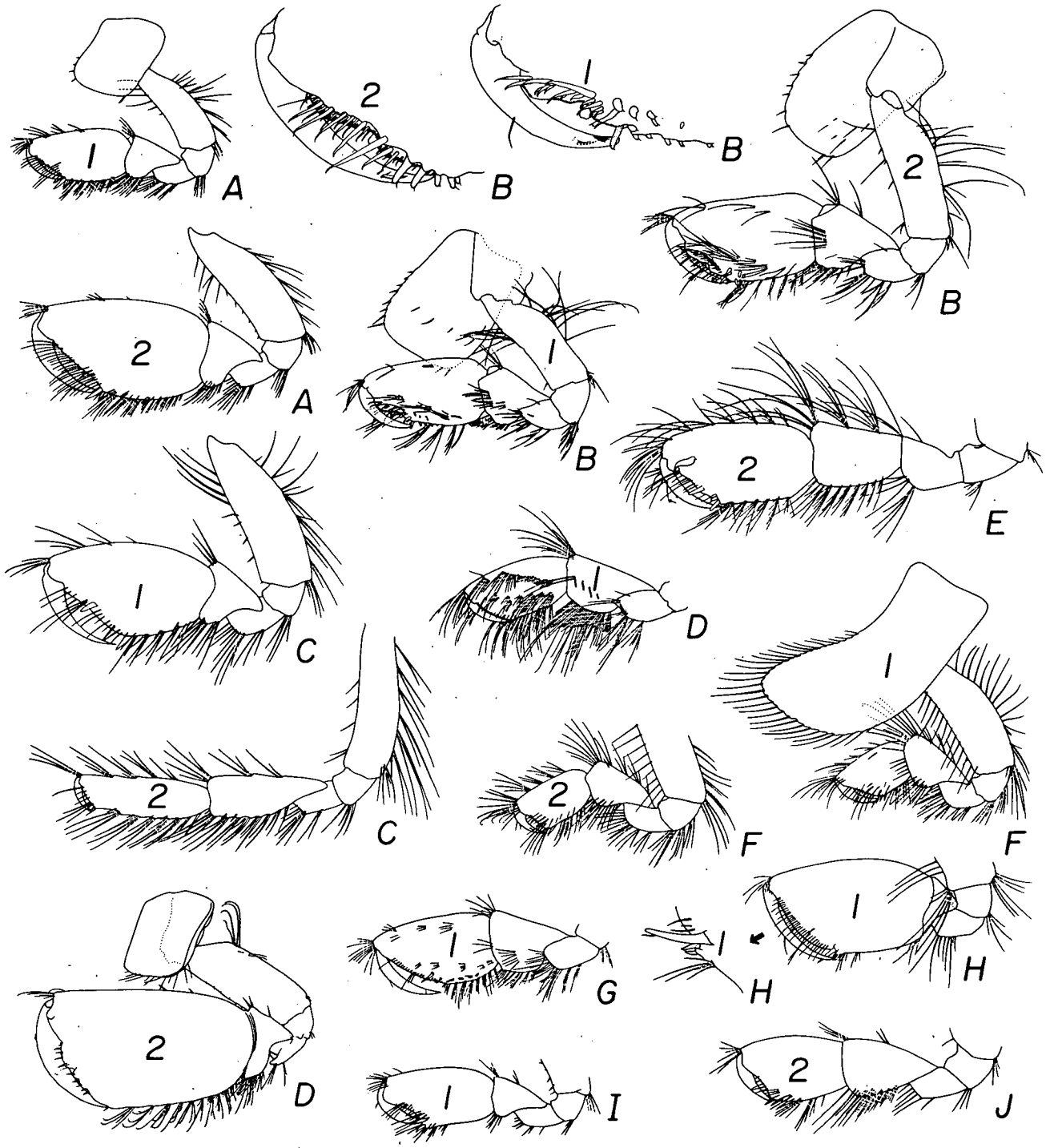


Figure 10. Gnathopods as numbered; A, Dikerogammarus haemobaphes; B, Gammarus mucronatus; C, Iphigenella acanthopoda; D, Parelasmopus ya; E, Gammarus pulex; F, Axelboeckia spinosa; G, Metohia carinata; H, Niphargogammarus intermedius; I, Gmelina costata; J, Rhipidogammarus rhipidiophorus.

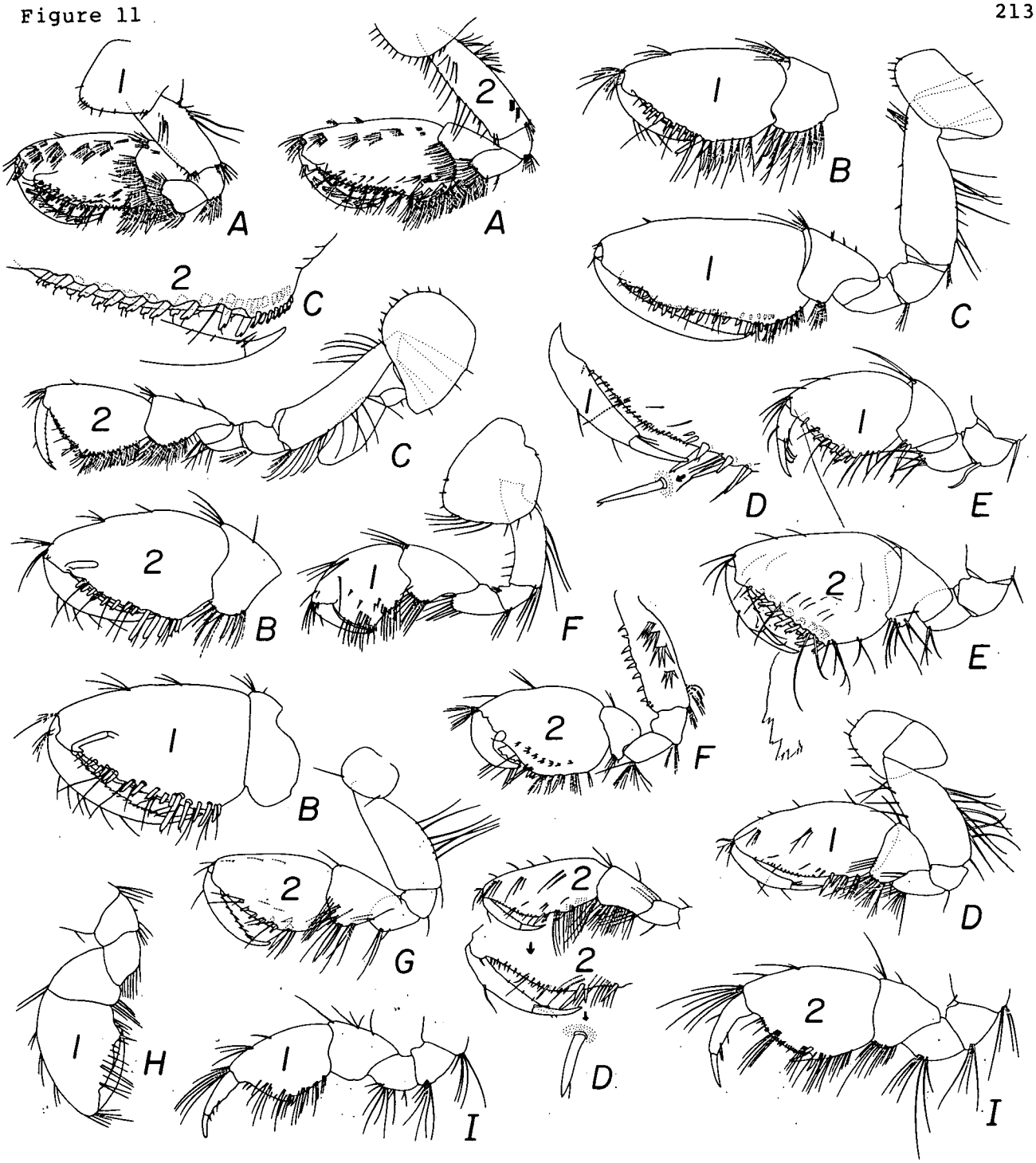


Figure 11. Gnathopods as numbered; A, Phreatogammarus fragilis; B, Pseudocrangonyx asiaticus; C, Stygobromus pizzinii; D, Sternophysinx filaris; E, Stygobromus vitreus; F, Uroctena westralis; G, Kergueleniola macra; H, Falklandella obtusa; I, Paramelita barnardi.

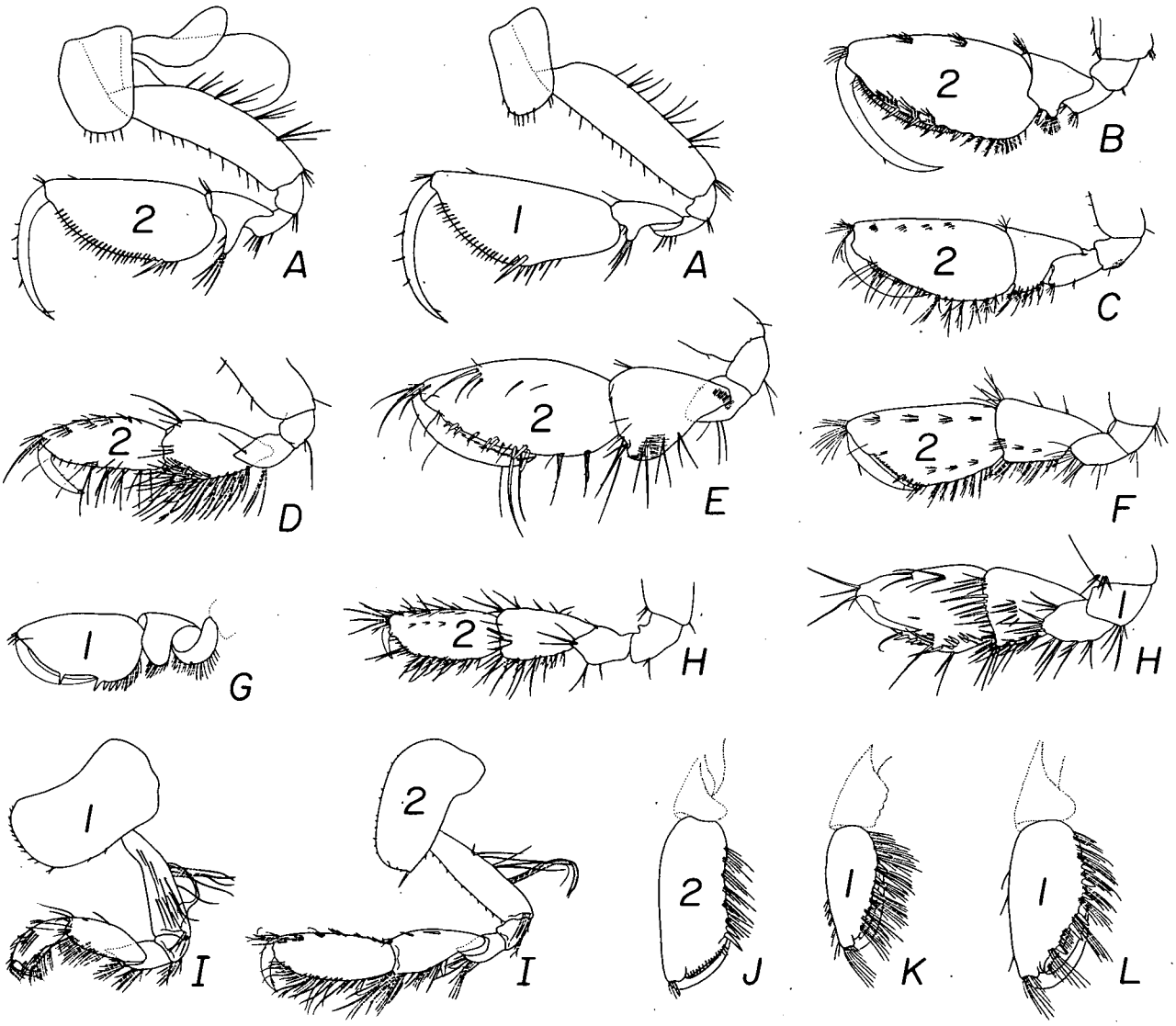


Figure 12. Gnathopods as numbered; A, Gammaracanthus loricatus; B, Typhlogammarus mrazeki; C, Melita shimizui; D, Dulzura sal; E, Liagoceradocus lonomakus; F, Metohia carinata; G, Acanthogammarus grewingkii; H, Mesogammarus melitoides; I, Bathyceradocus stephenseni; J, Plesiogammarus gerstaeckeri; K, Abyssogammarus sarmatus; L, Philolimnogammarus viridis.

A. Behning

Behning started publishing papers on Russian freshwater amphipods about 1914, but ceased after the start of World War II. The work included studies especially on PontoCaspian elements occurring in waters near Kiev and the Volga River, not only Gammaridans but Corophium.

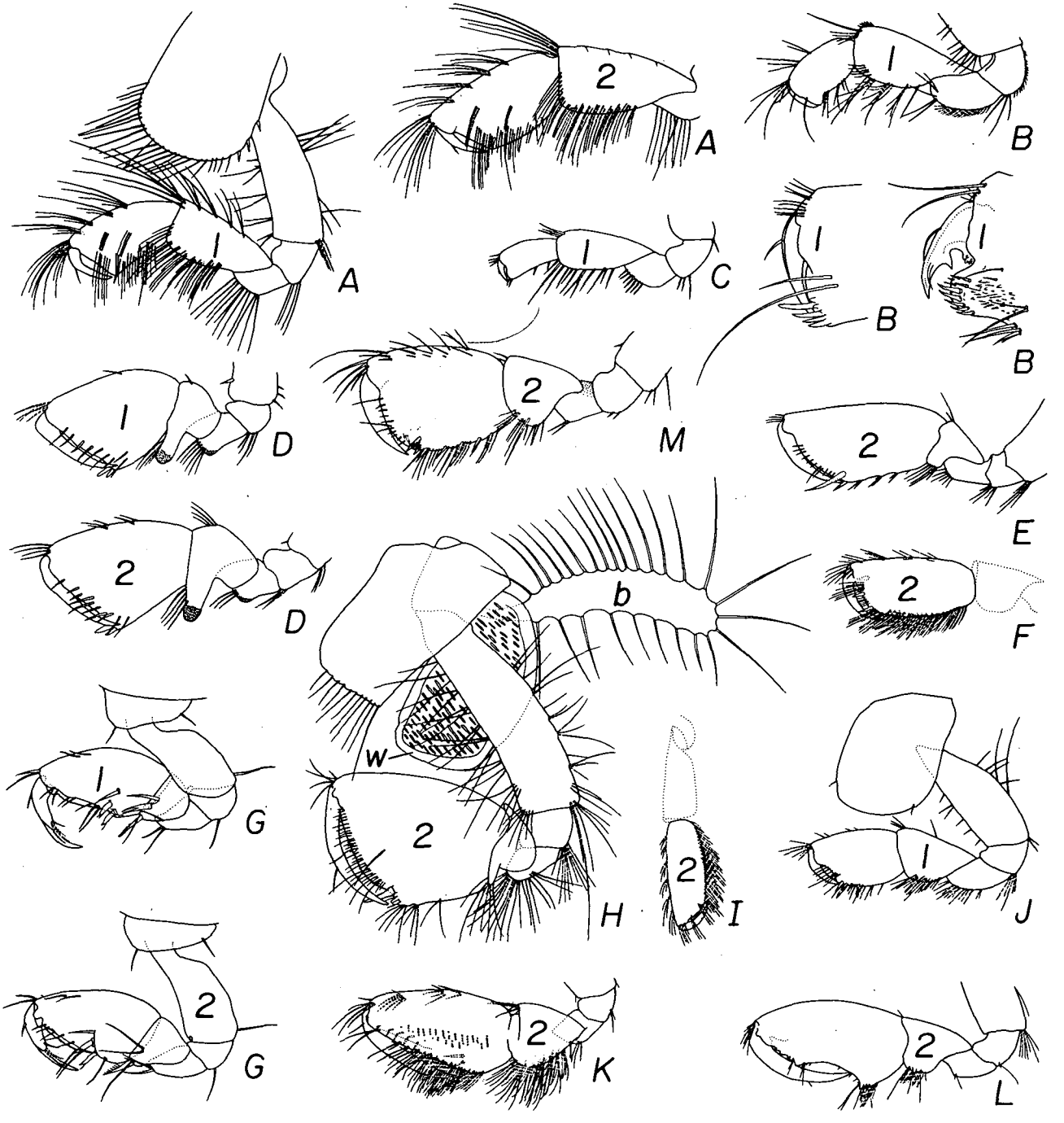


Figure 13. Gnathopods as numbered; A, Austrogammarus australis; B, Melita shimizui; C, Metacrangonyx longipes; D, Austroniphargus bryophilus; E, Paraniphargoides grimmi; F, Philolimnogammarus viridis; G, Pseudingolfiella chilensis; H, Niphargogammarus intermedius; I, Eurybiogammarus violaceus; J, Rhipidogammarus rhipidiophorus; K, Dulzura sal; L, Victoriopisa australiensis; M, Zernovia volgensis.

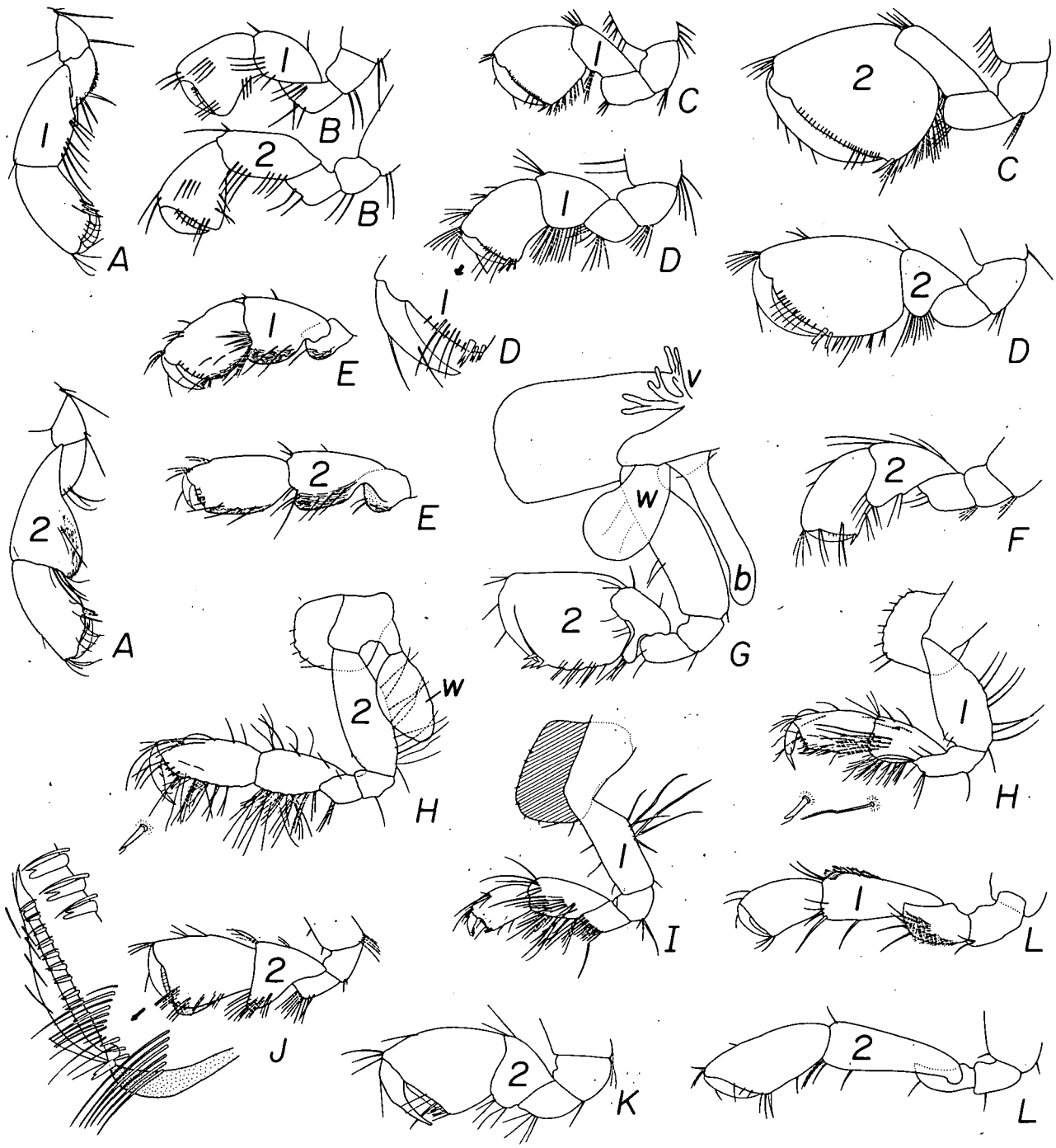


Figure 14. Gnathopods as numbered; A, Eriopisella sechellensis; B, Giniphargus pulchellus; C, Niphargus ladmiraulti; D, Pseudoniphargus africanus; E, Indoniphargus indicus; F, Falklandella obtusa; G, Perthia branchialis; H, Mexiweckelia particeps; I, Dulzura sal; J, Neoniphargus spenceri; K, Protocrangonyx fontinalis. L), ?

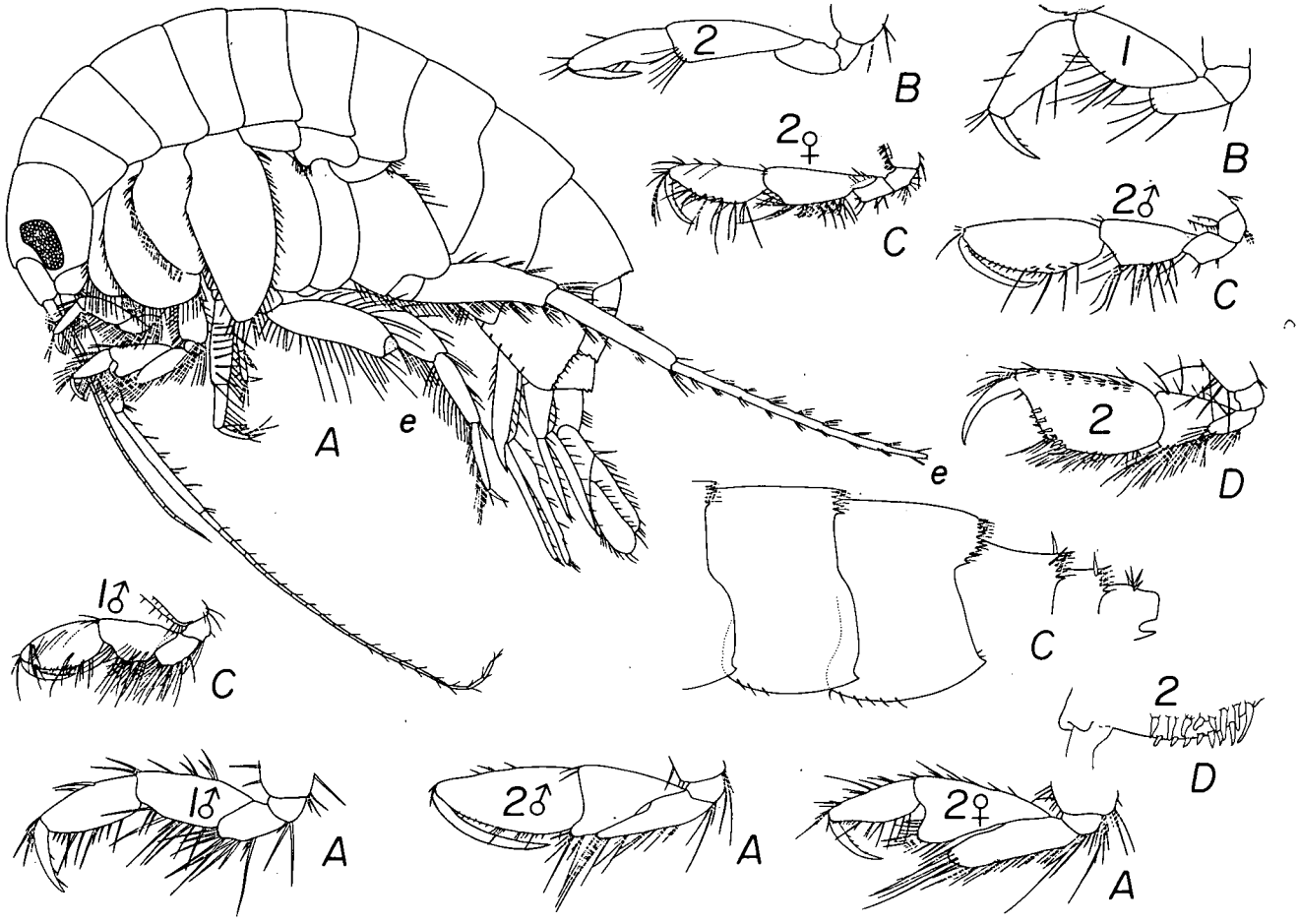


Figure 15. Gnathopods as numbered and miscellaneous; A, Megaluropus longimerus; B, Hornellia sinuatus; C, Metaceradocus occidentalis; D, Cheirocratella thori.

G.O. Sars

Perhaps the greatest carcinologist who ever lived, George Ossian Sars is known for the excellence of his systematic analyses and fine graphic renditions plus the high quality of the plates he produced in the Crustacea of Norway and the Crustacea of the Caspian Sea. The style, proportions and arrangement of his plates have never been duplicated, let alone surpassed. Surprisingly, Sars was known in his early years for his first major work which was on freshwater crustaceans of Norway (1867) and then later he became the great marine expert. Fortunately, Sars was given the great Caspian collections of Dr. Grimm and Mr. Warpachowsky and he rendered them in his usual fine style. Though he largely ignored mouthparts of the Caspian gammaroids, which has frustrated many of us in later years, he obviously realized they were all very similar to each other and only the smallest of differences in palpar setation have been usable for later splitters.

Figure 16

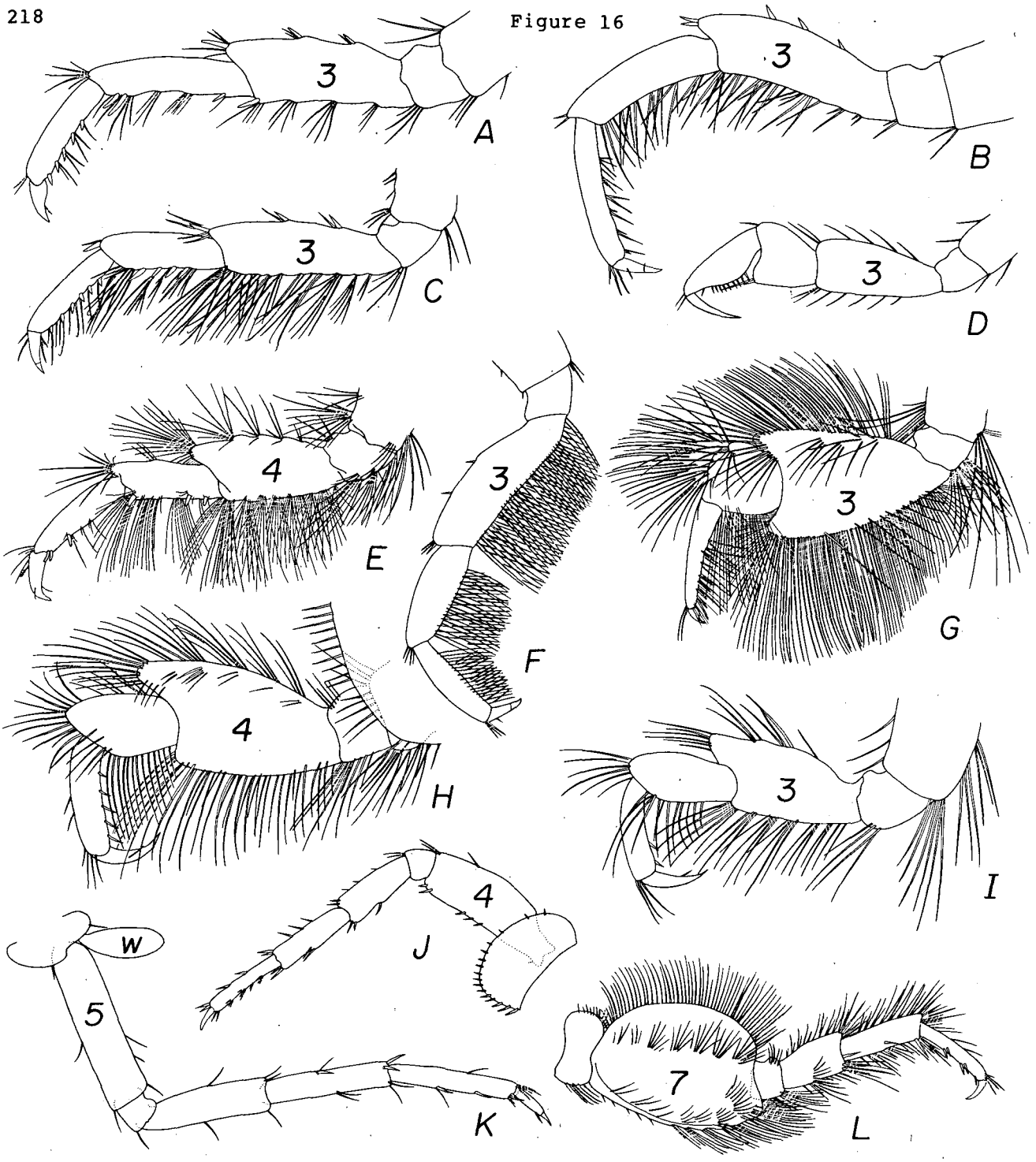


Figure 16. Pereopods as numbered. A. Dikerogammarus haemobaphes; B, Tadzhikistania ruffoi; C, Gammarus komareki; D, Falklandella obtusa; E, Obesogammarus obesus; F, Comatogammarus ferghanensis; G, Euxinia sarsi; H, Pontogammmarus robustoides; I, Pandorites podoceroides; J, Paracrangonyx compactus; K, Kergueleniola macra; L, Dikerogammarus caspius.

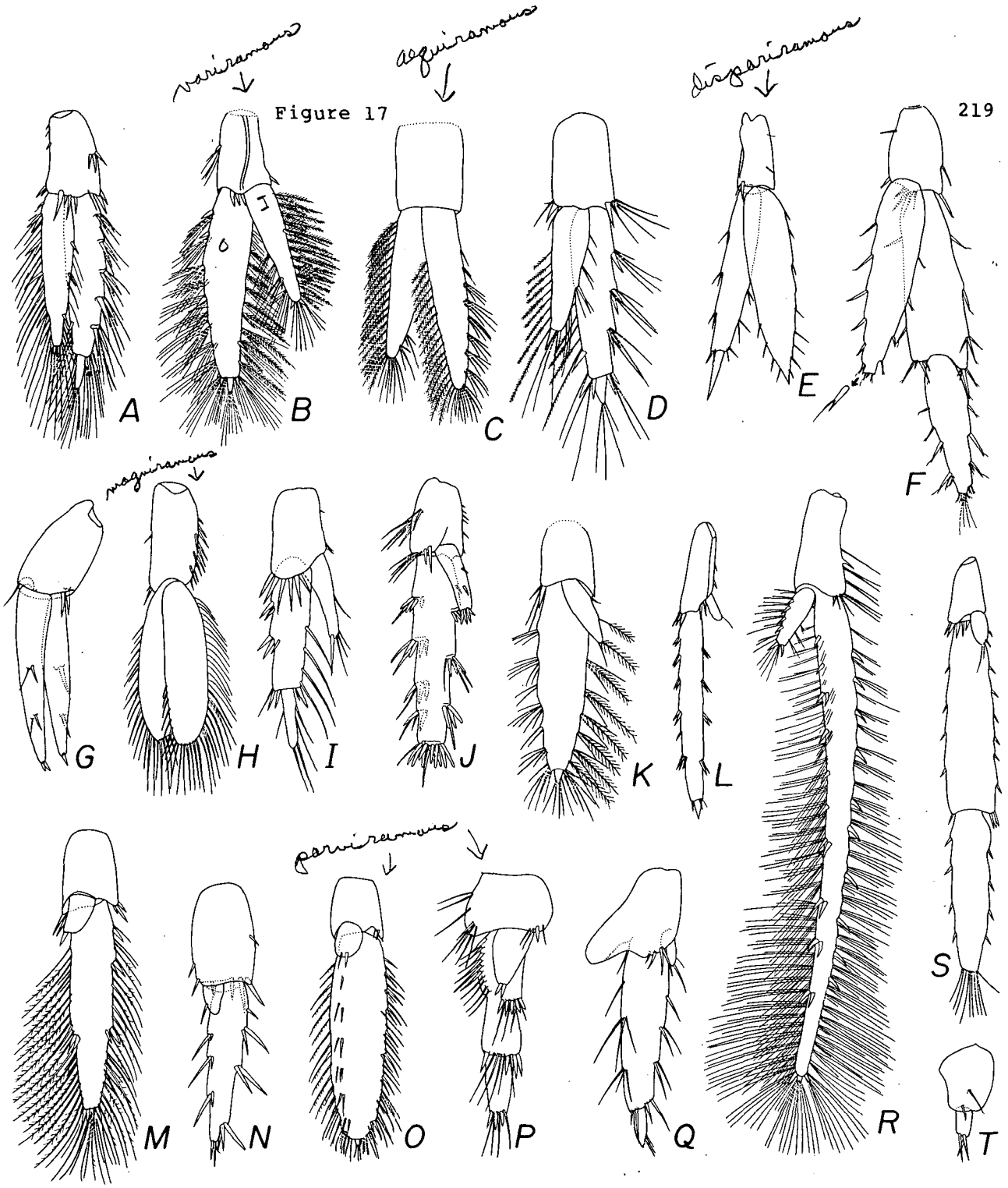


Figure 17. Uropod 3; A, Gammarus locusta; B, Eurybiogammarus fuscus; C, Brandtia lata; D, Austrogammarus australis; E, Liagoceradocus lonomakus; F, Psammogammarus longiramus; G, Kergueleniola macra; H, Gammaracanthus loricatus; I, Stenogammarus compressus; J, Paramelita barnardi; K, Micruropus vortex; L, Melita dentata; M, Dikerogammarus haemobaphes; N, Crangonyx antennatus; O, Gmelina costata; P, Uroctena westralis; Q, Sandro starmuhlneri; R, Eulimnogammarus czerskii; S, Eriopisa elongata; T, Stygobromus pizzinii.

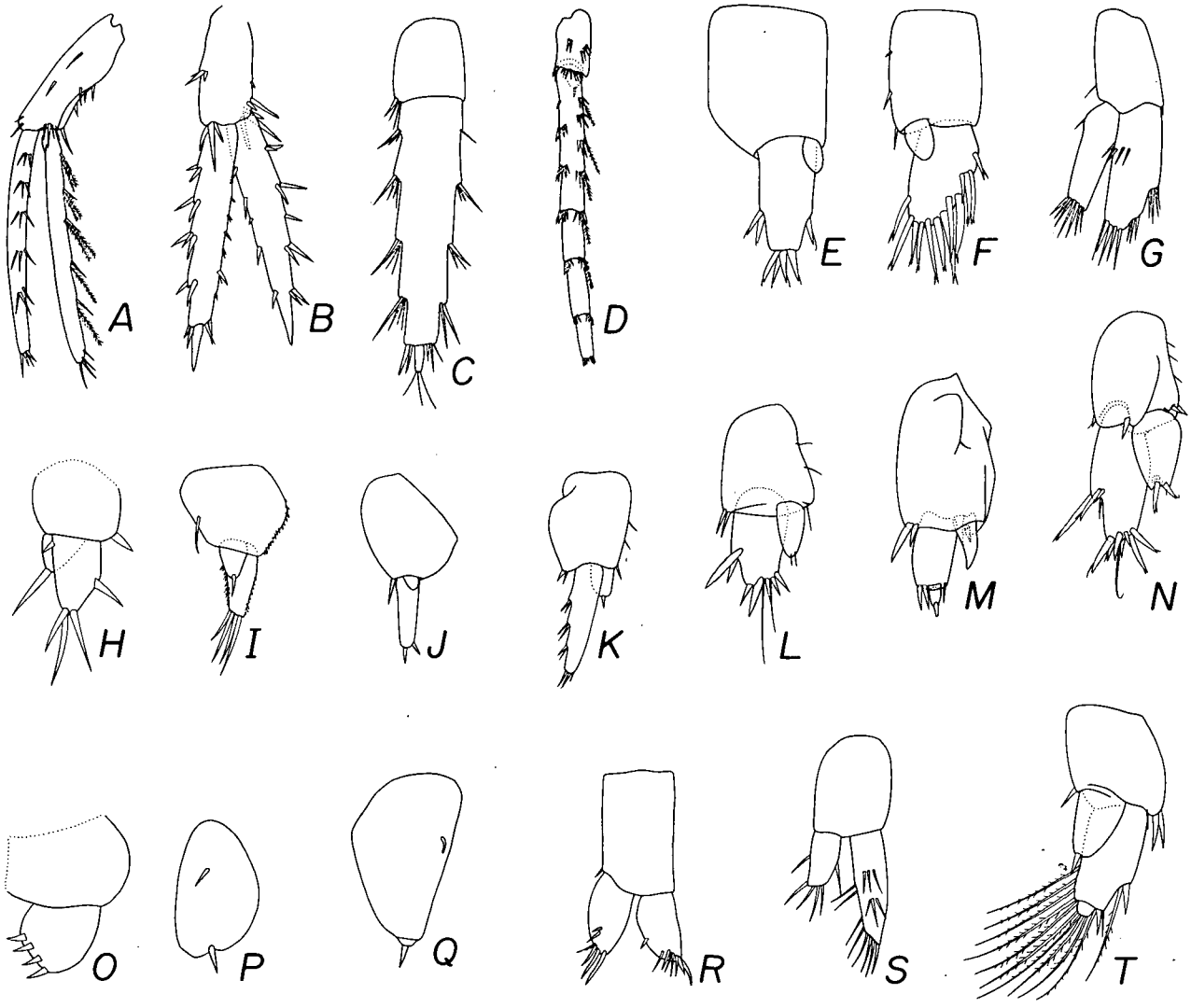


Figure 18. A, Phreatogammarus fragilis; B, Mesogammarus melitoides C, Pseudocrangonyx asiaticus; D, Allocrangonyx pellucidus; E, Protocrangonyx fontinalis; F, Bactrurus hubrichti; G, Elasmopus rapax; H, Crypturopus rugosus; I, Gammaroporeia alaskensis; J, Metacrangonyx longipes; K, Axelboeckia spinosa; L, Beaudettia palmeri; M, Gammarella mokari; N, Elasmopus bollonsi; O, Hyalellopsis czyrnianski; P, Stygobromus nortoni; Q, Stygobromus araeus; R, Parapherusa crassipes; S, Falklandella obtusa; T, Obesogammarus obesus. ALL FIGURES = UROPOD 3.

A. Derzhavin

Derzhavin published a wide variety of papers on amphipods from Kamchatka to the Urals, to the Transcaucausus and the Black Sea, and reported on fossil amphipod imprints in the Upper Sarmatian. He discovered the famous Caspicola (formerly Caspiella) in the Caspian Sea.

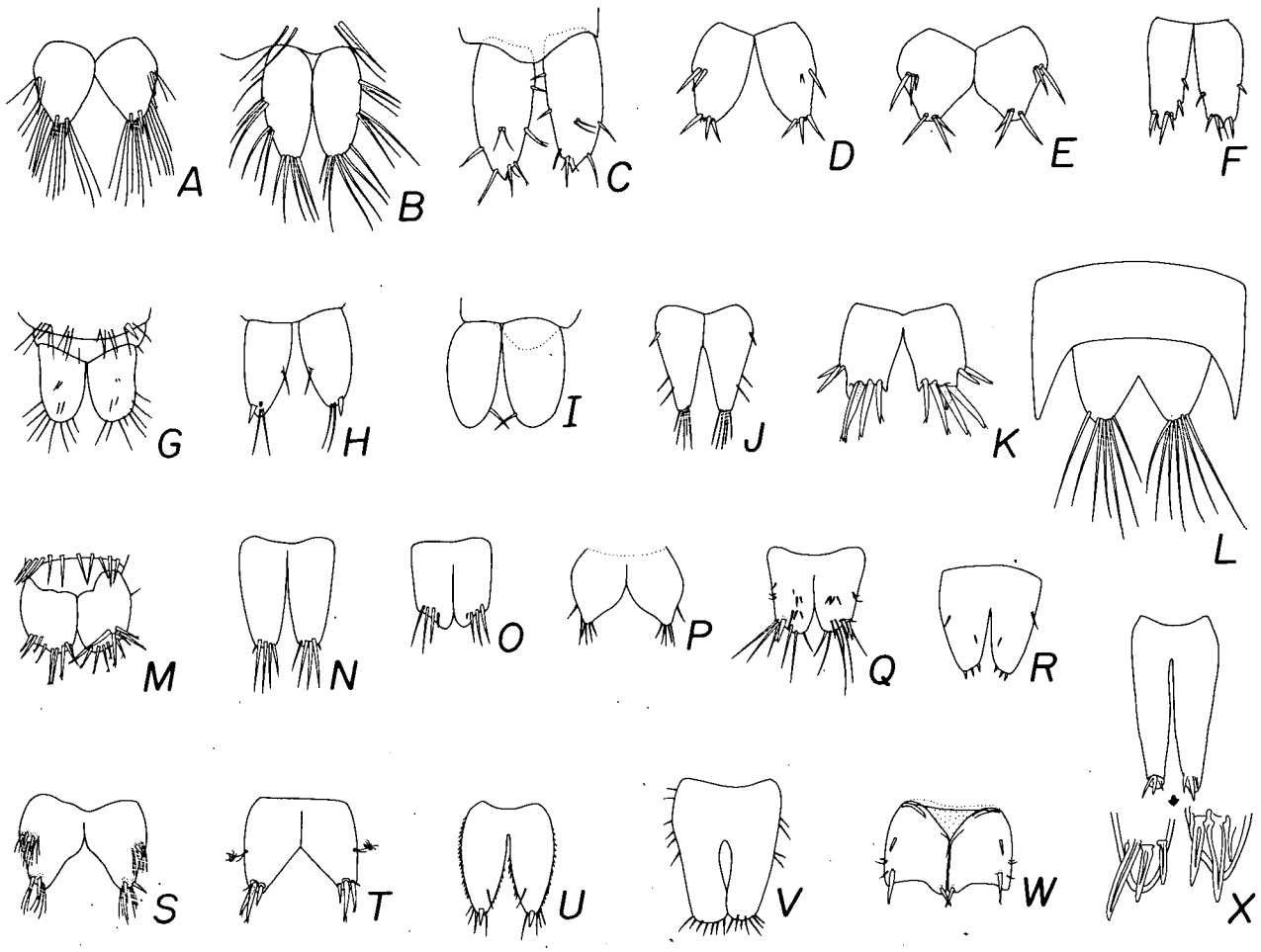


Figure 19. Telsons; A, Echinogammarus berilloni; B, Pachyschesis branchialis; C, Liagoceradocus lonomakus; D, Longigammarus bruni; E, Echinogammarus ischnus; F, Melita shimizui G, Austrogammarus haasei; H, Uroctena westralis; I, Galapsiellus leleuporum; J, Issykogammarus hamatus; K, Elasmopus neglectus; L, Plesiogammarus gerstaeckeri; M, Phreatogammarus fragilis; N, Paraniphargoides grimmi; O, Elasmopus rapax; P, Parapallasea borowskii; Q, Paramelita barnardi; R, Neoniphargus spenceri; S, Typhlogammarus mrazeki; T, Crangonyx antennatus; U, Gmelina costata; V, Pallasea brandti; W, Rotomelita ana; X, Perthia branchialis.

Ja. A. Birstein

Birstein began interesting reports on freshwater amphipods in the Caucausus in 1932. Later, he worked over Caspian materials and Crimean collections. These results included not only Niphargus and Synurella but such unusual genera as Derzhavinella and Zenkevitchia. By the time he died a few years ago, he had also become an expert on deep-sea amphipods, enjoying collaboration with the husband wife team, the Vinogradov's (Vinogradova).

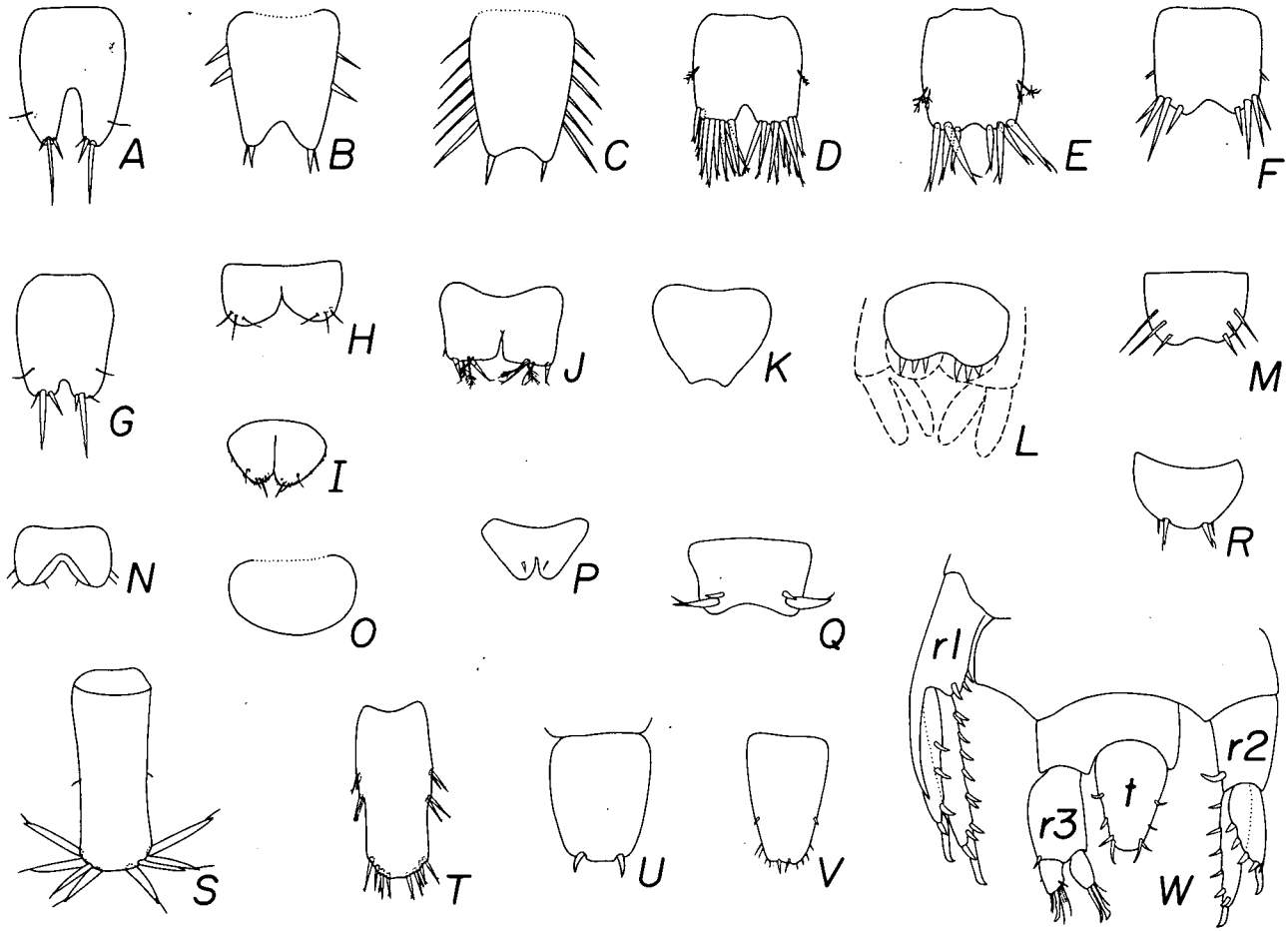


Figure 20. Telsons; A, Pseudocrangonyx asiaticus; B, Pallasea cancelloides; C, Pallasea baikali; D, Bactrurus hubrichti; E, Stygobromus vitreus; F, Pseudoniphargus africanus; G, Pseudocrangonyx coreanus; H, Kergueleniola macra; I, Gammaroporeia alaskensis; J, Jerbarnia mecochira; K, Acanthogammarus grewingkii; L, Hyalellopsis taczankowskii; M, Falklandella cuspidata; N, Gammaracanthus loricatus; O, Hyalellopsis czyrnianskii; P, Axelboeckia spinosa; Q, Beaudettia palmeri; R, Protocrangonyx fontinalis; S, Stygobromus araeus; T, Stygobromus pizzinii; U, Paracrangonyx compactus; V, Gammarellus homari; W, Parapherusa crassipes.

A. Bazikalova

A. Bazikalova is the most prominent modern student of amphipods in Lake Baikal. Her monumental work of 1945, now a classic, summarized the very difficult Baikal fauna, composed as it is of about 300 species in about 45 genera. She rectified all of the earlier work of Dybowsky, Sowinsky and Dorogostaisky, thereby making the faunistics of Baikal intelligible to all workers. Between 1945 and 1975 she published several more modernizations of difficult large genera such as Micruropus and Echiuropus

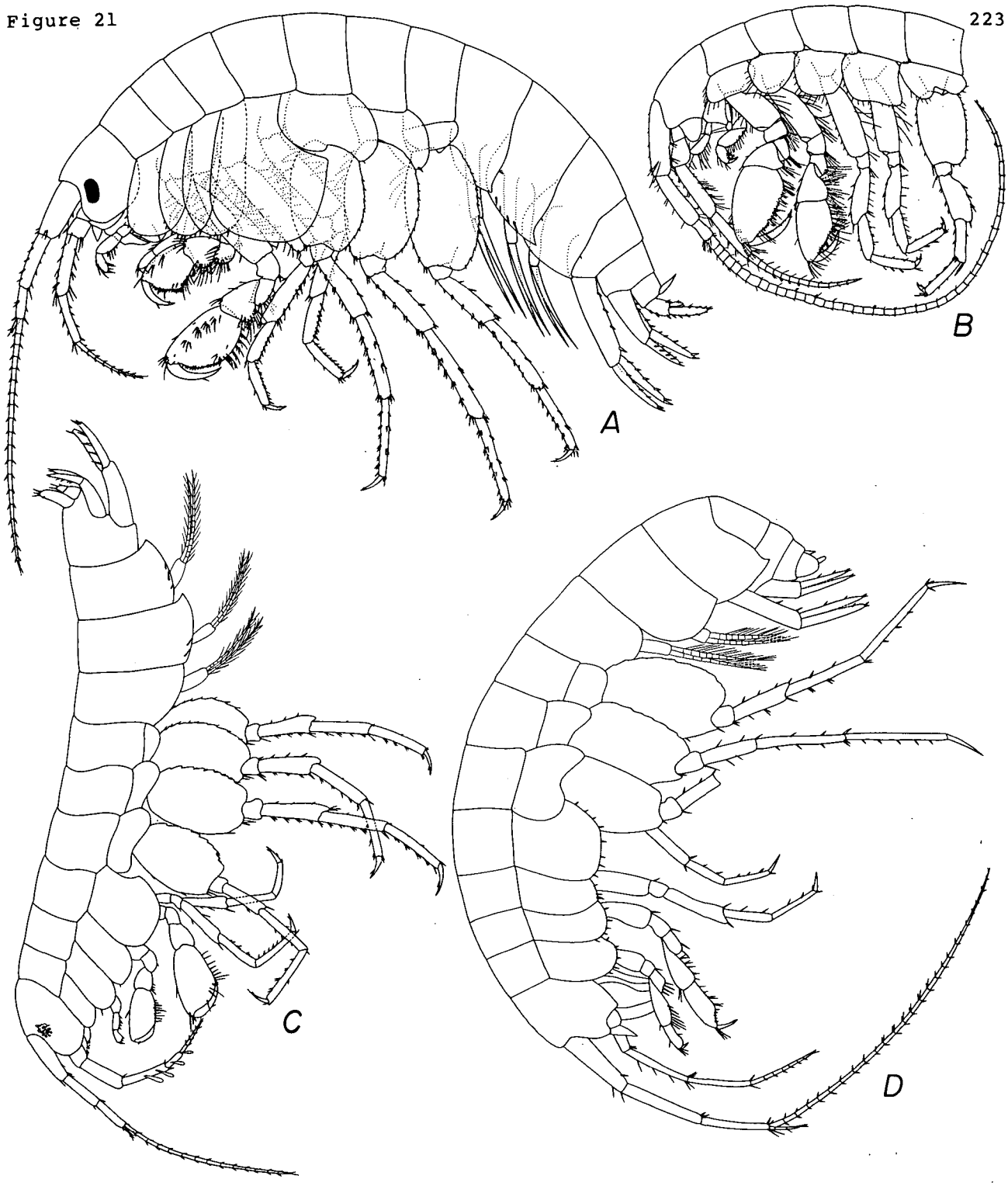


Figure 21. A, Crangonyx richmondensis; B, Bactrurus hubrichti; C, Stygobromus ambulans; D, Metacrangonyx longipes.

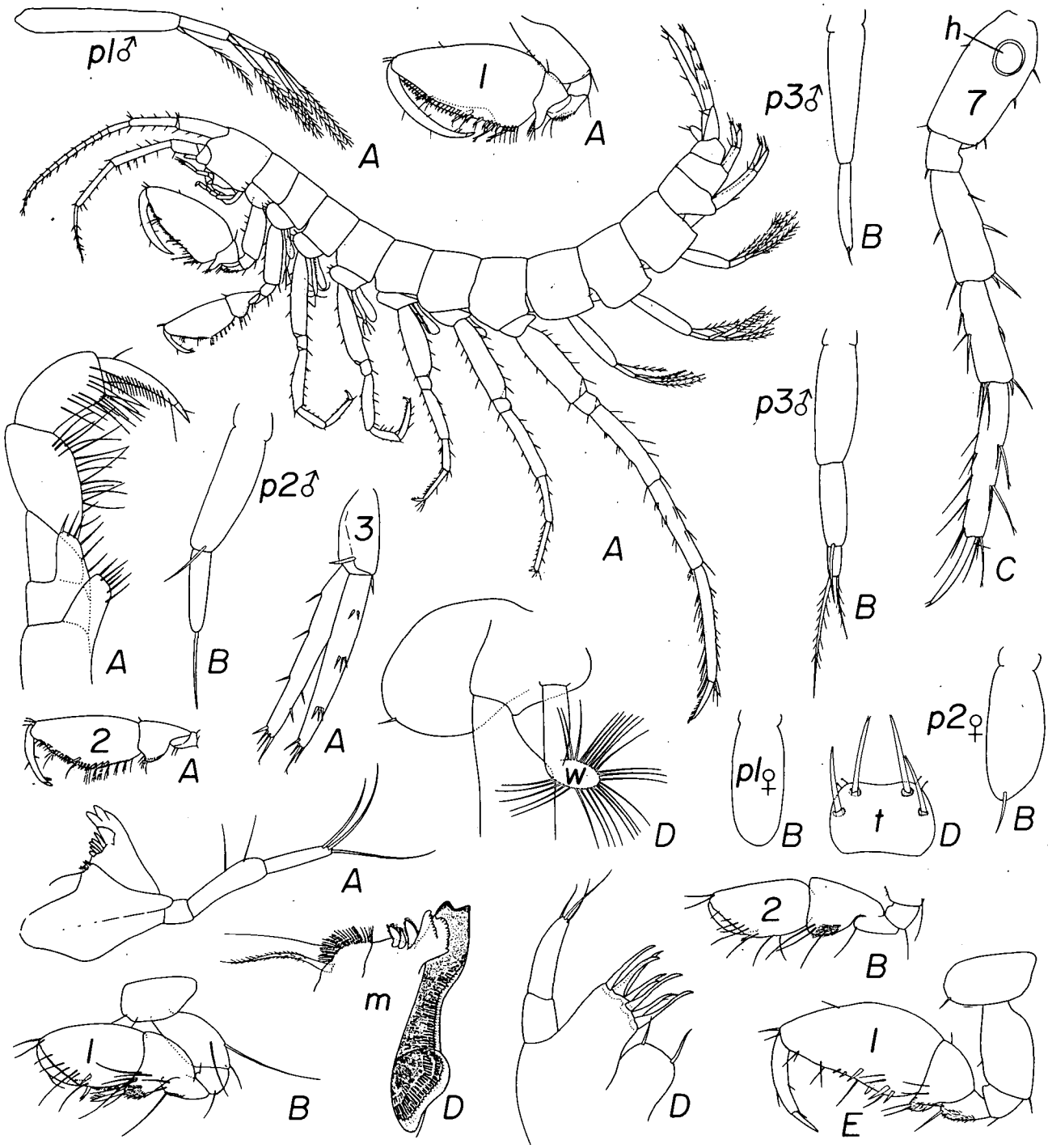


Figure 22. A, Bogidiella bredini; B, Bollegidia capensis; C, Bogidiella ischnusae; D, Afridiella somala; E, Bogidiella neotropica.

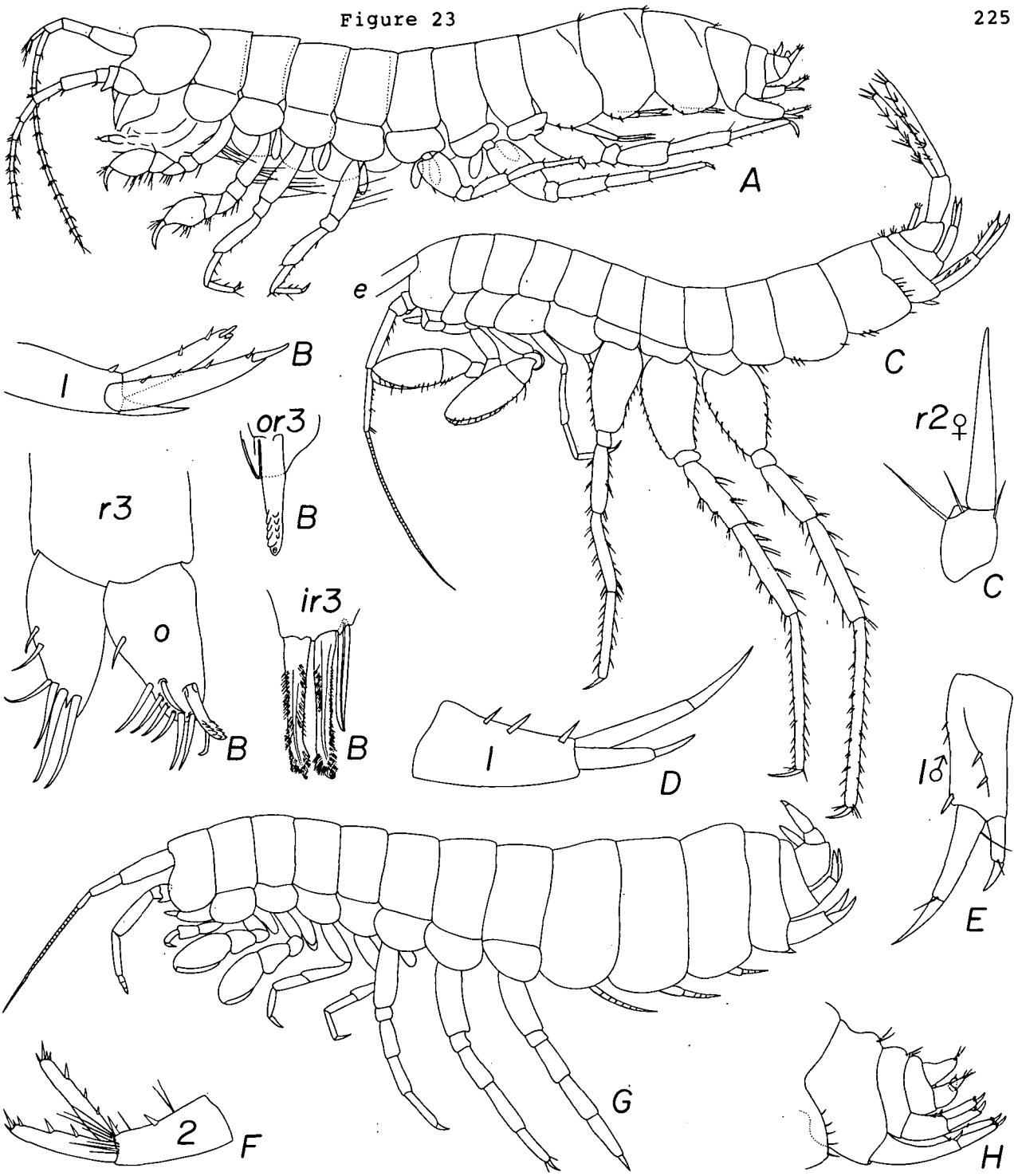


Figure 23. A, Protocrangonyx fontinalis; B, Parapherusa crassipes; C, Phreatogammarus fragilis; C, Pseudingolfiella chilensis; D, Rhipidogammarus rhipidiophorus; E, Neogammarus festae; F, Austrogammarus australis; G, Paracrangonyx compactus; H, Gammaroporeia alaskensis.

Figure 24

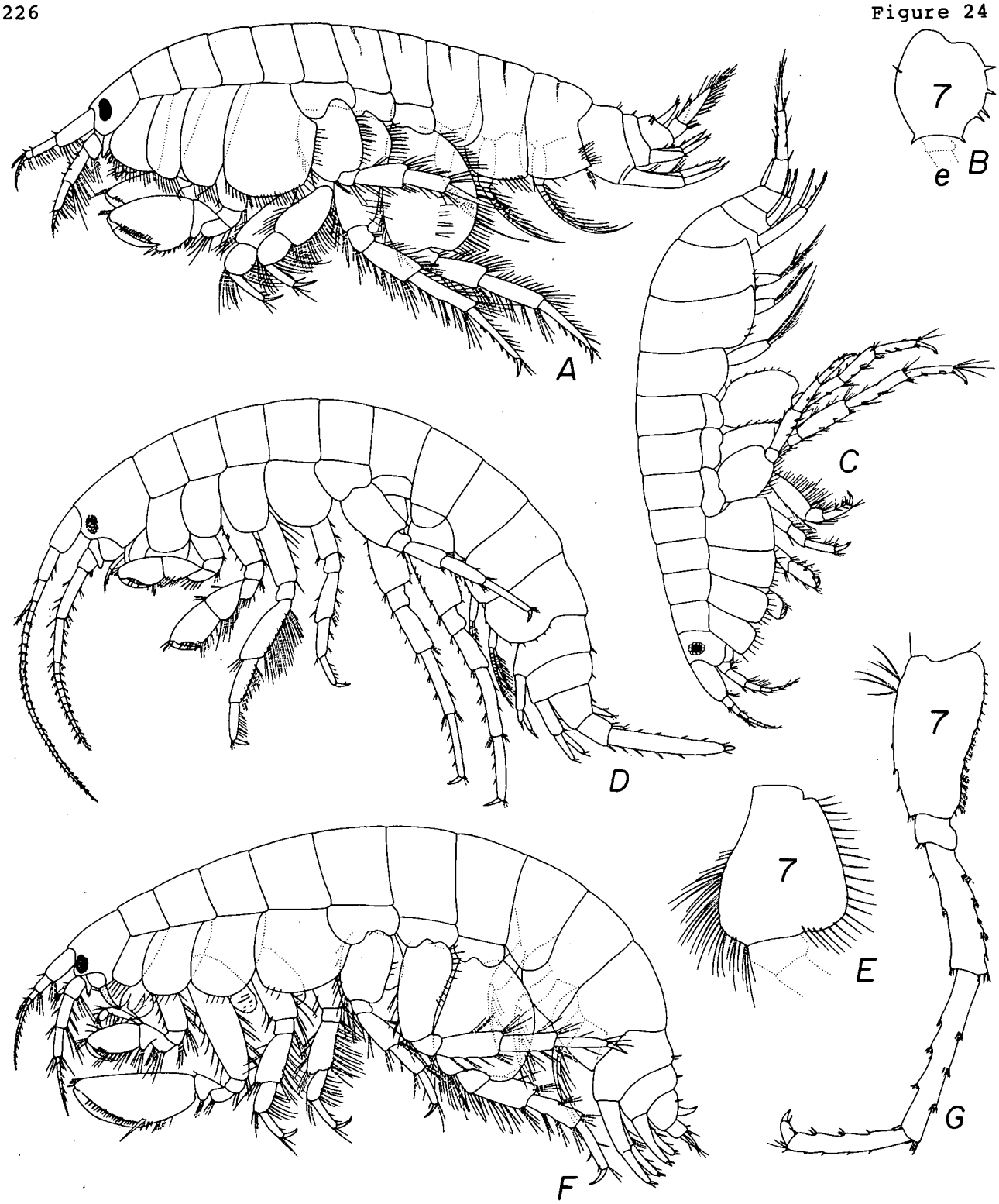


Figure 24. A, Compactogammarus compactus; B, Hakonboeckia strauchi; C, Stenogammarus macrurus; D, Rhipidogammarus rhipidiophorus; E, Hyalellopsis taczankowskii; F, Pandorites podoceroides; G, Typhlogammarus mrazeki.

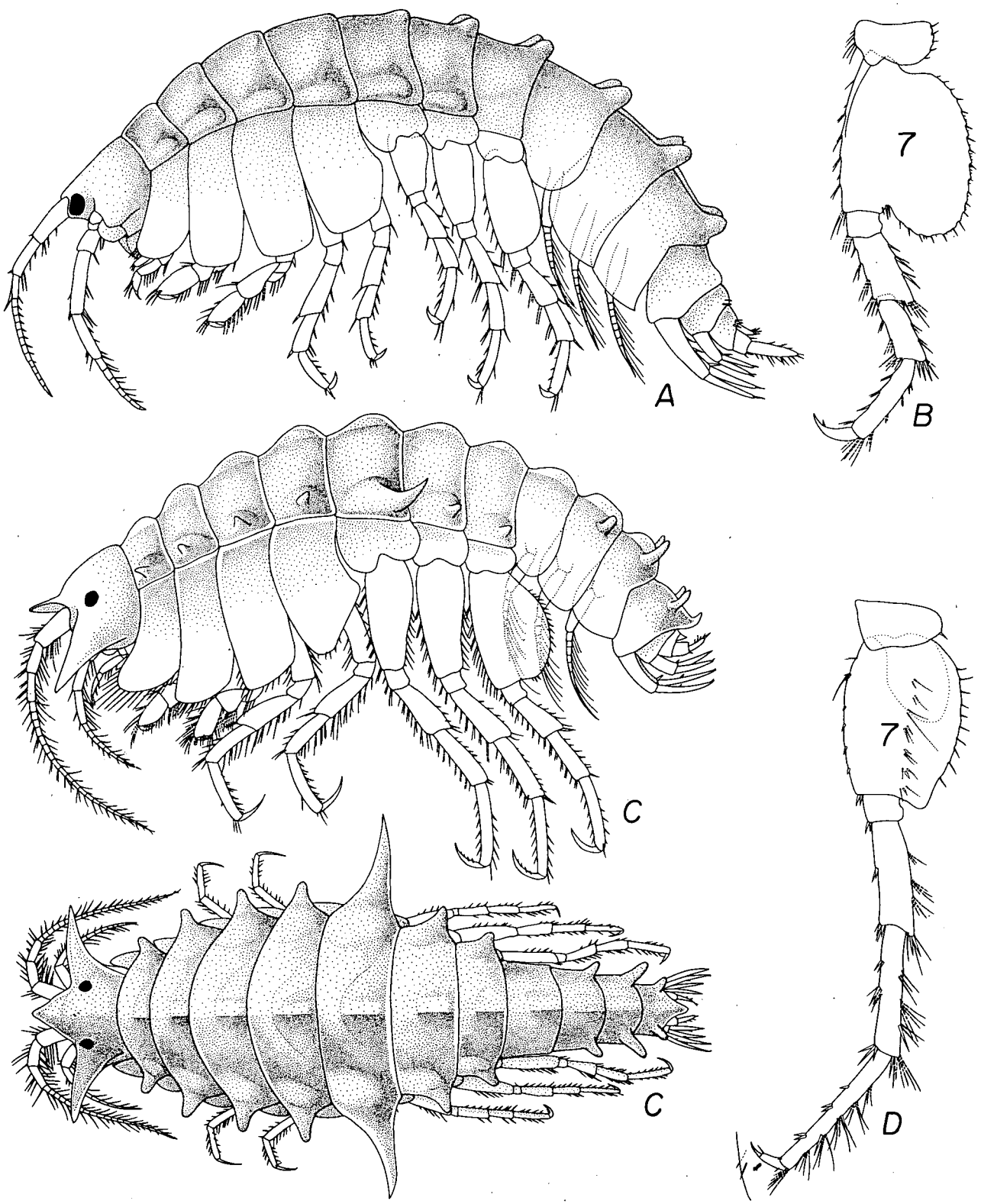


Figure 25. A, Kuzmelina kusnezowi; B, Amathillina cristata; C, Axelboeckia spinosa; D, Accubogammarus algor.

Figure 26

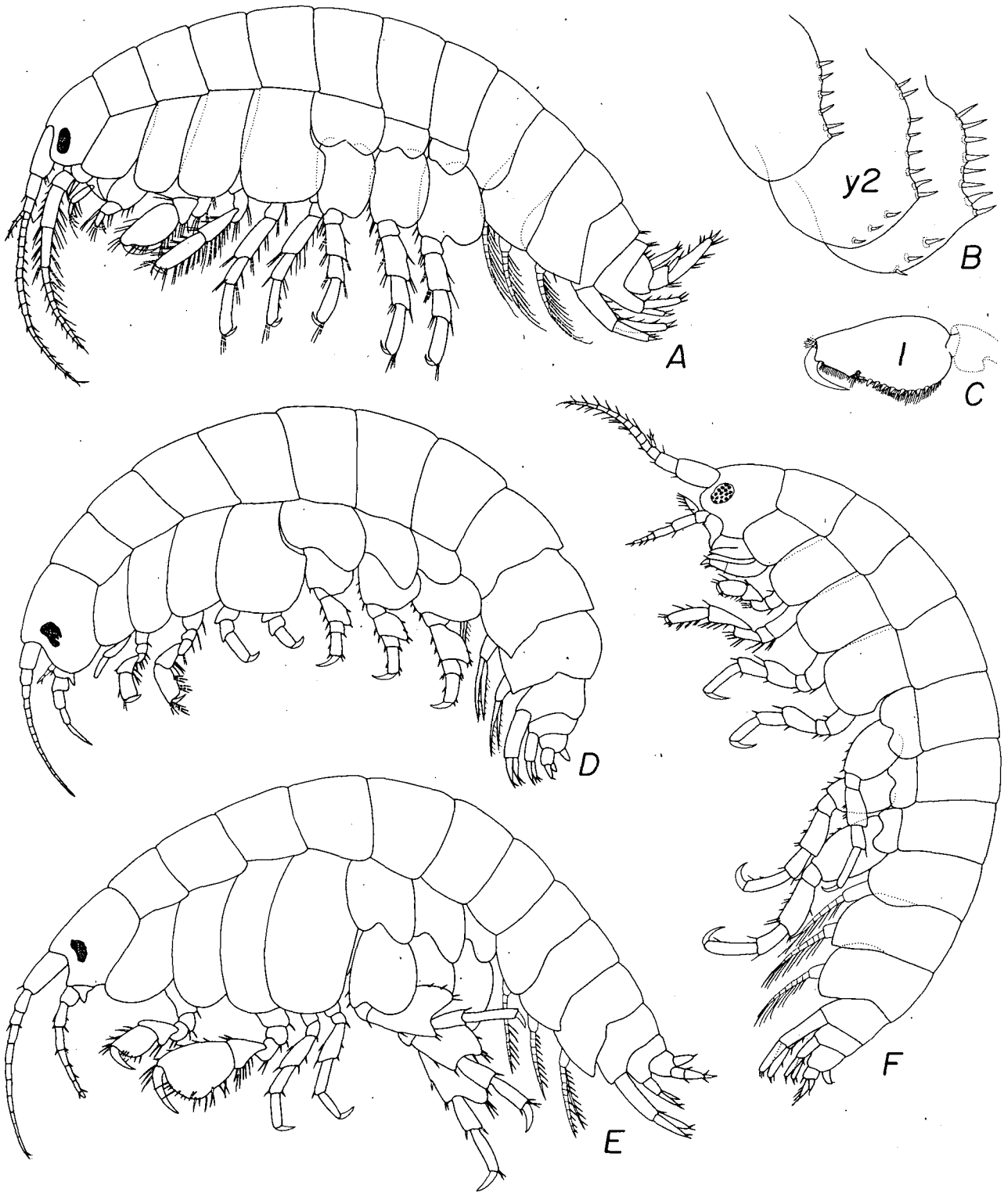


Figure 26. A, Iphigenella acanthopoda; B, Niphargus balcanicus; C, Pallasea cancellus; D, Behningiella brachypus; E, Zernovia volgensis; F, Cardiophilus baeri.

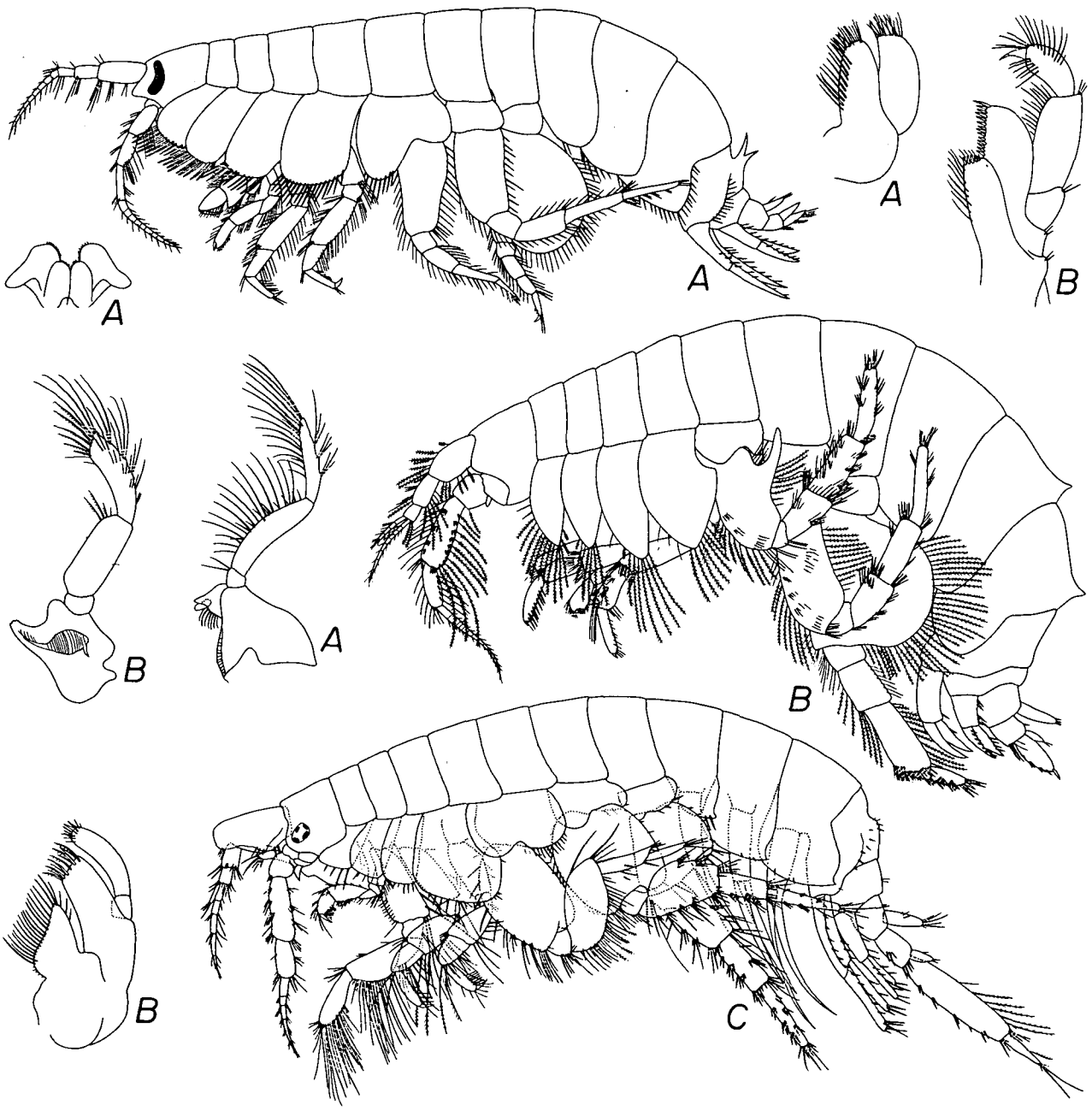


Figure 27. A, Pontoporeia femorata; B, Priscillina armata; C, Bathyporeia quoddyensis.

M. Ueno

Professor Ueno commenced publishing on freshwater amphipods in 1927 and has widely covered Japan and mainland Asia. Some of his most interesting discoveries came in the 1970's from lava caves of offshore volcanic islands, which today would be classified as anchialine.

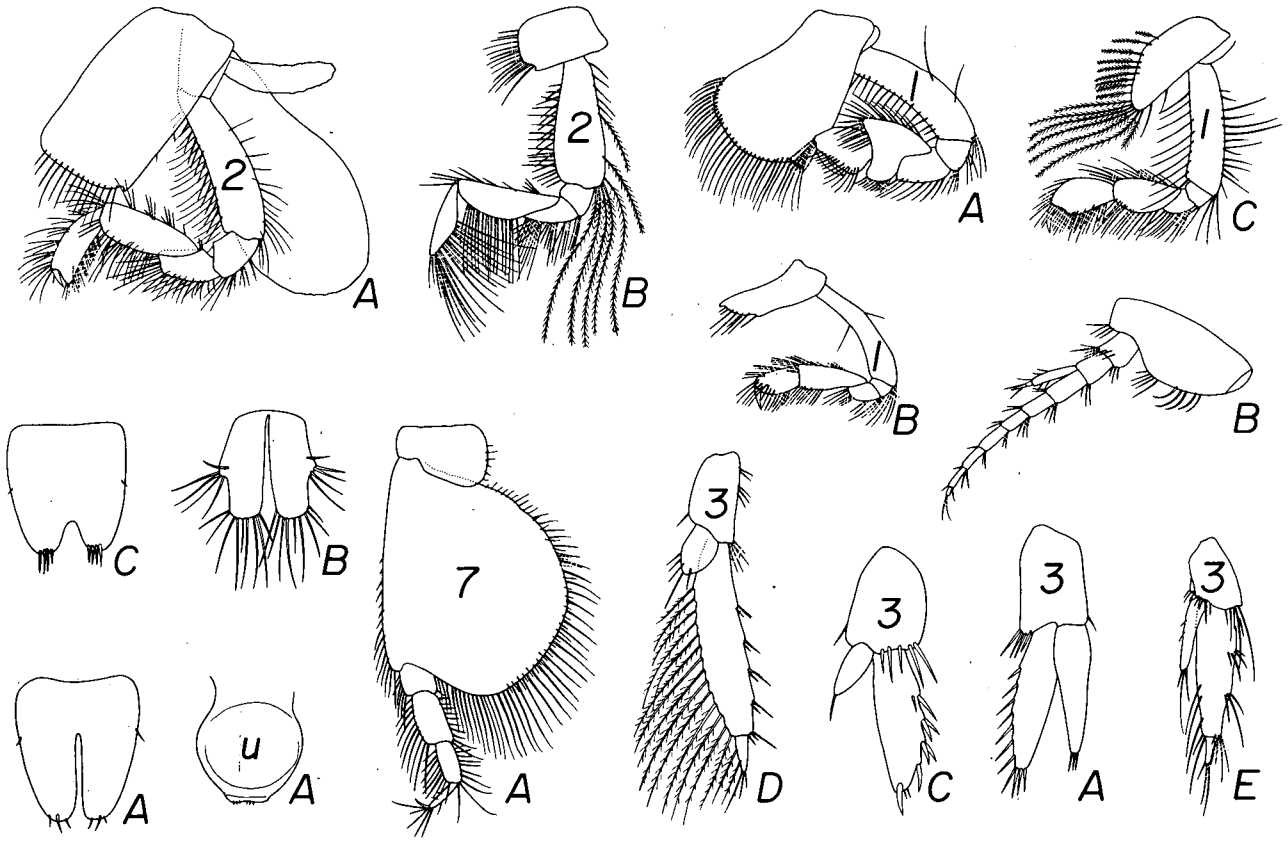


Figure 28. A, Pontoporeia femorata; B, Bathyporeia guilliamsoniana; C, Priscillina armata; D, Bathyporeia robertsoni; E, Amphiporeia lawrenciana.

S. Karaman

Stanko Karaman's father was the first scientist of Yugoslavia, and his grandson, Gordan, carries on the tradition of a family laced with scientists. Stanko Karaman is responsible for the exploration of the Balkans in search of cave and epigean amphipods; Gordan now believes the major species have all been discovered. The Karamans have been, and are, very prolific workers, as can be seen in the Bibliography herein.

Linnaeus

Carl von Linne described what has become the first officially valid amphipod name, now known as Gammarus pulex (Cancer Pulex Linnaeus, 1758: 633). It was described in nine Latin words, its type-locality being the "sea shore," which makes it suspect, as pulex is a lake and stream species. Nevertheless, Stebbing (1906) accepts this as the establishment of pulex. The next and final gammaridean amphipod described by Linnaeus (1758) was Gammarus locusta (as Cancer locusta) on page 634. This came from maritime Europe.

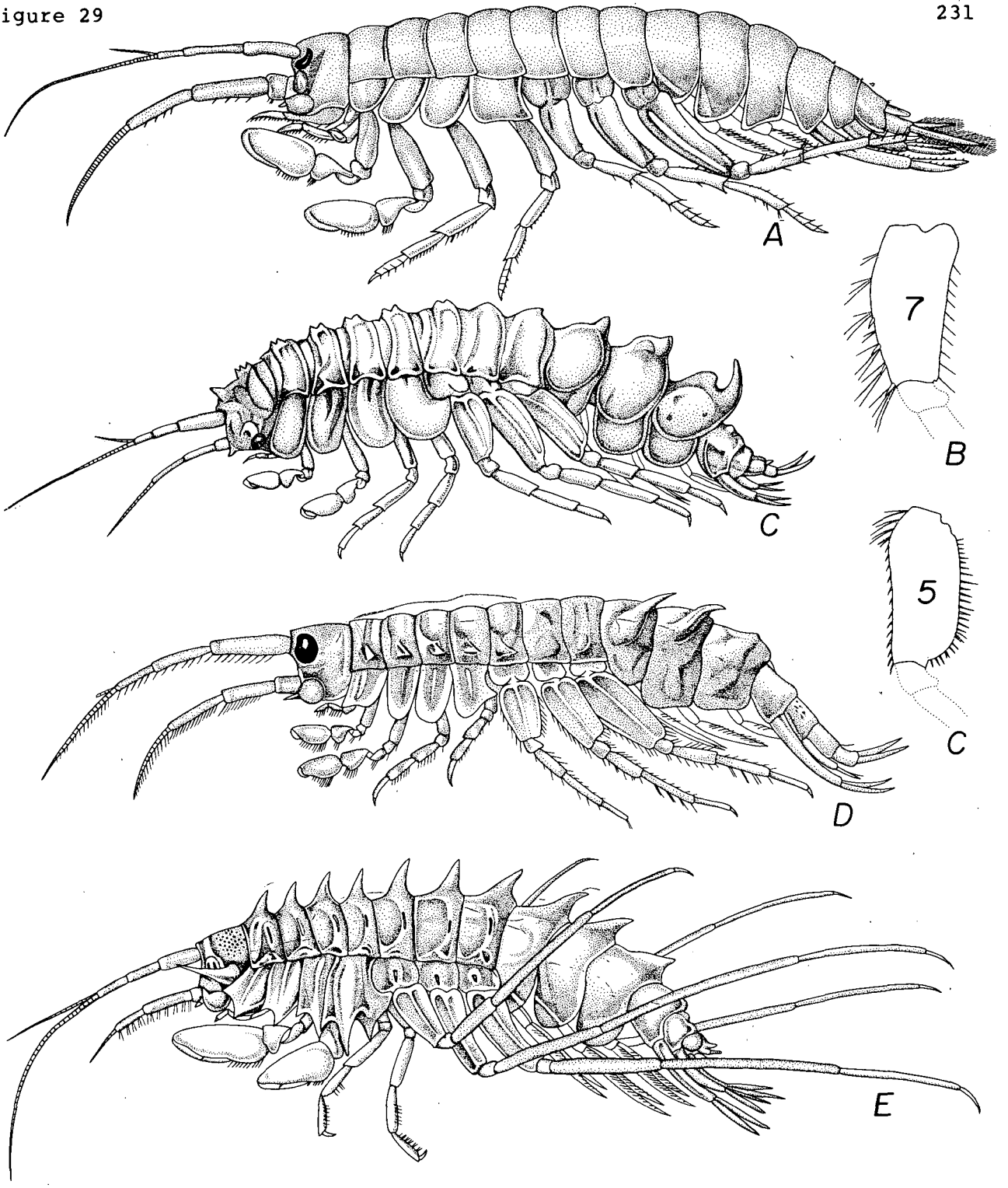


Figure 29. A, Corophiomorphus kietlinskii; B, Eulimnogammarus czerskii; C, Carinurus reissneri; D, Pallasea kessleri; E, Acanthogammarus grewingkii.

Figure 30

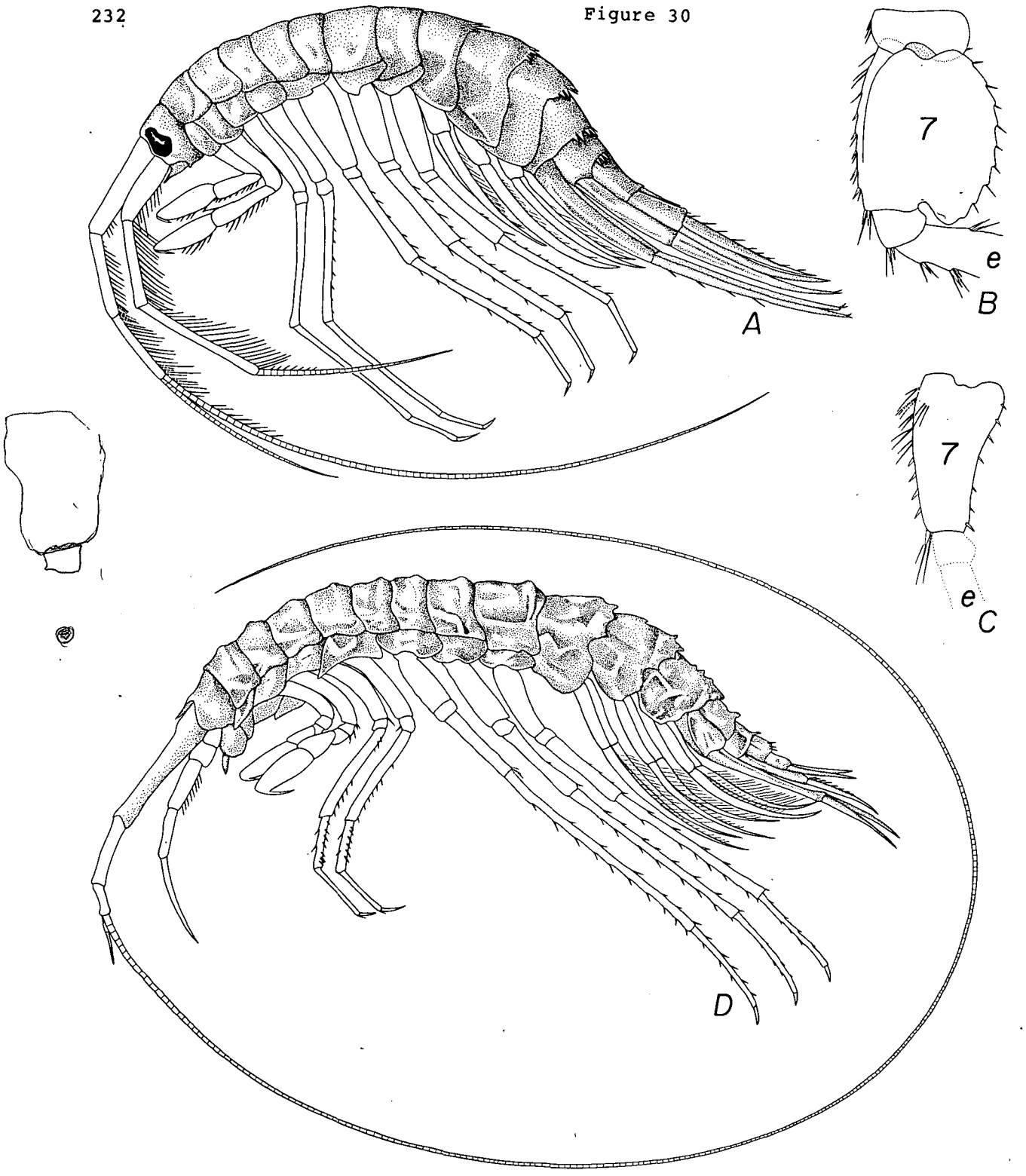


Figure 30. A, Abyssogammarus sarmatus; B, Dikerogammarus haemobaphes; C, Eulimnogammarus verrucosus; D, Garjajewia sarsi. (Epimera 1-2, pereonite 7, and urosomites 1-2 variously interpreted).

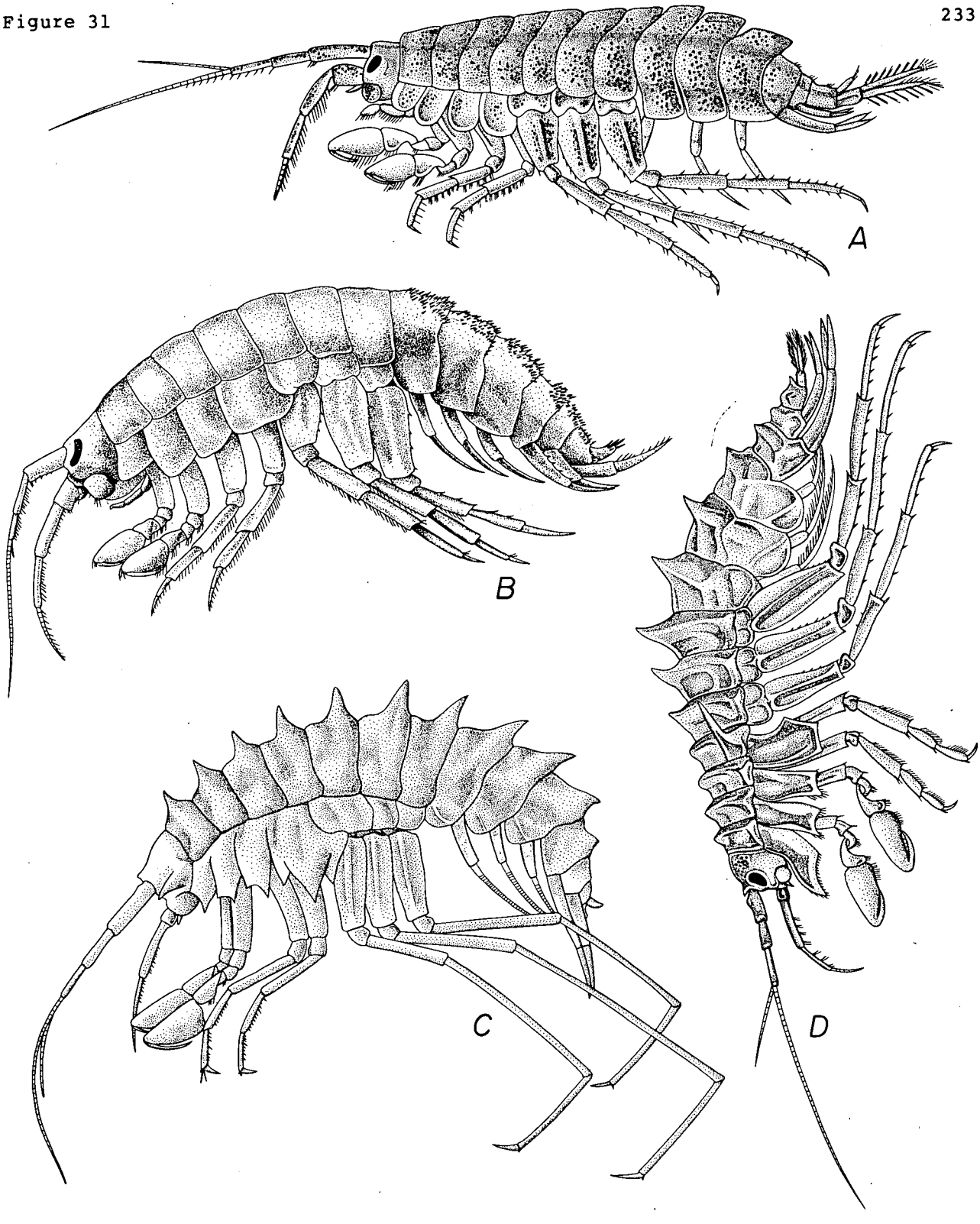


Figure 31. A, Eucarinogammarus wagii; B, Eulimnogammanos verrucosus, C, Acanthogammarus grewingkii; D, Acanthogammarus godlewskii.

Figure 32

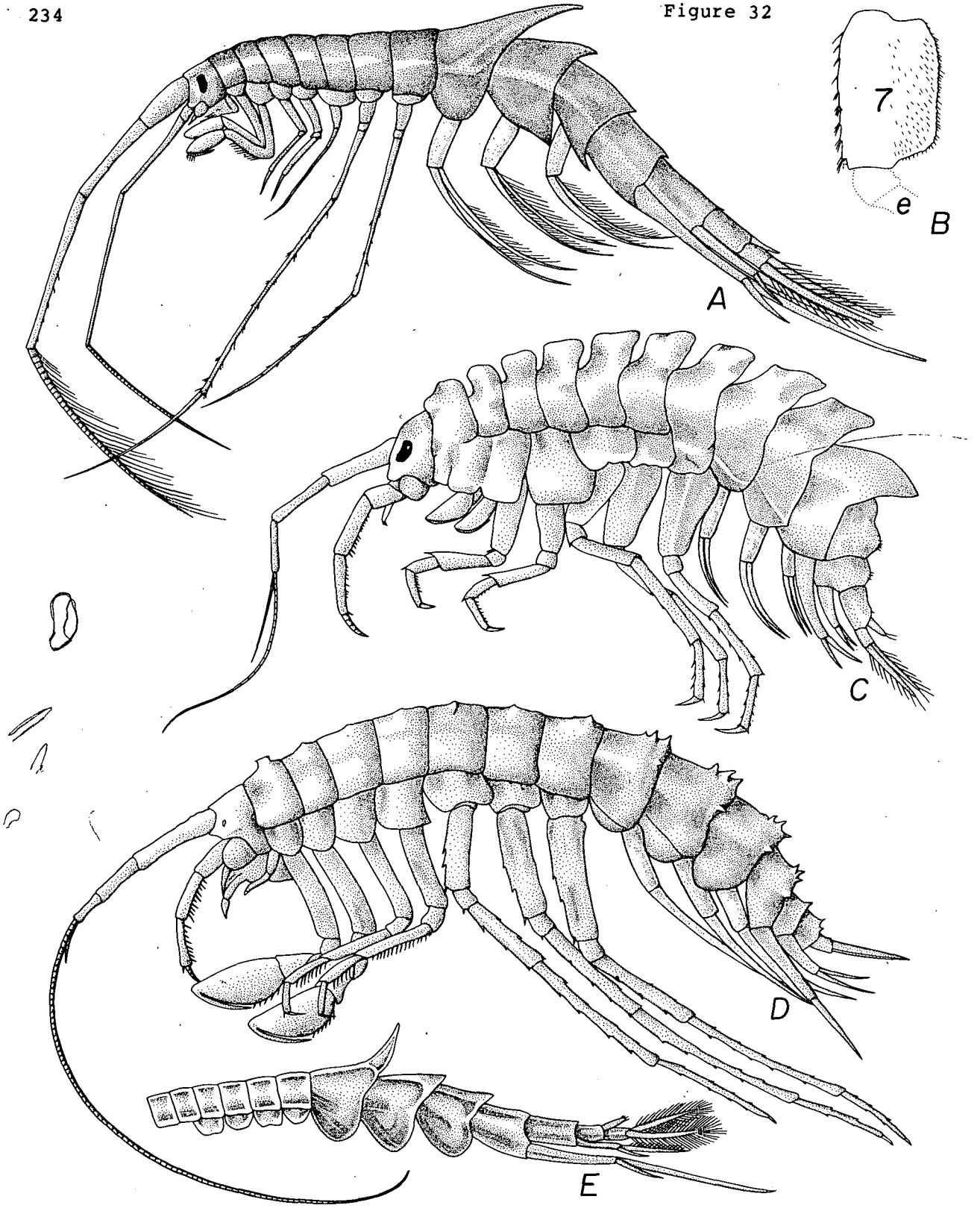


Figure 32. A, Macrohectopus branickii, version of Bazikalova, 1945; B, Coniurus radoszkowskii; C Eucarinogammarus wagii; D, Plesiogammarus zienkowskii; E, same as A, version of Dybowsky, 1874.

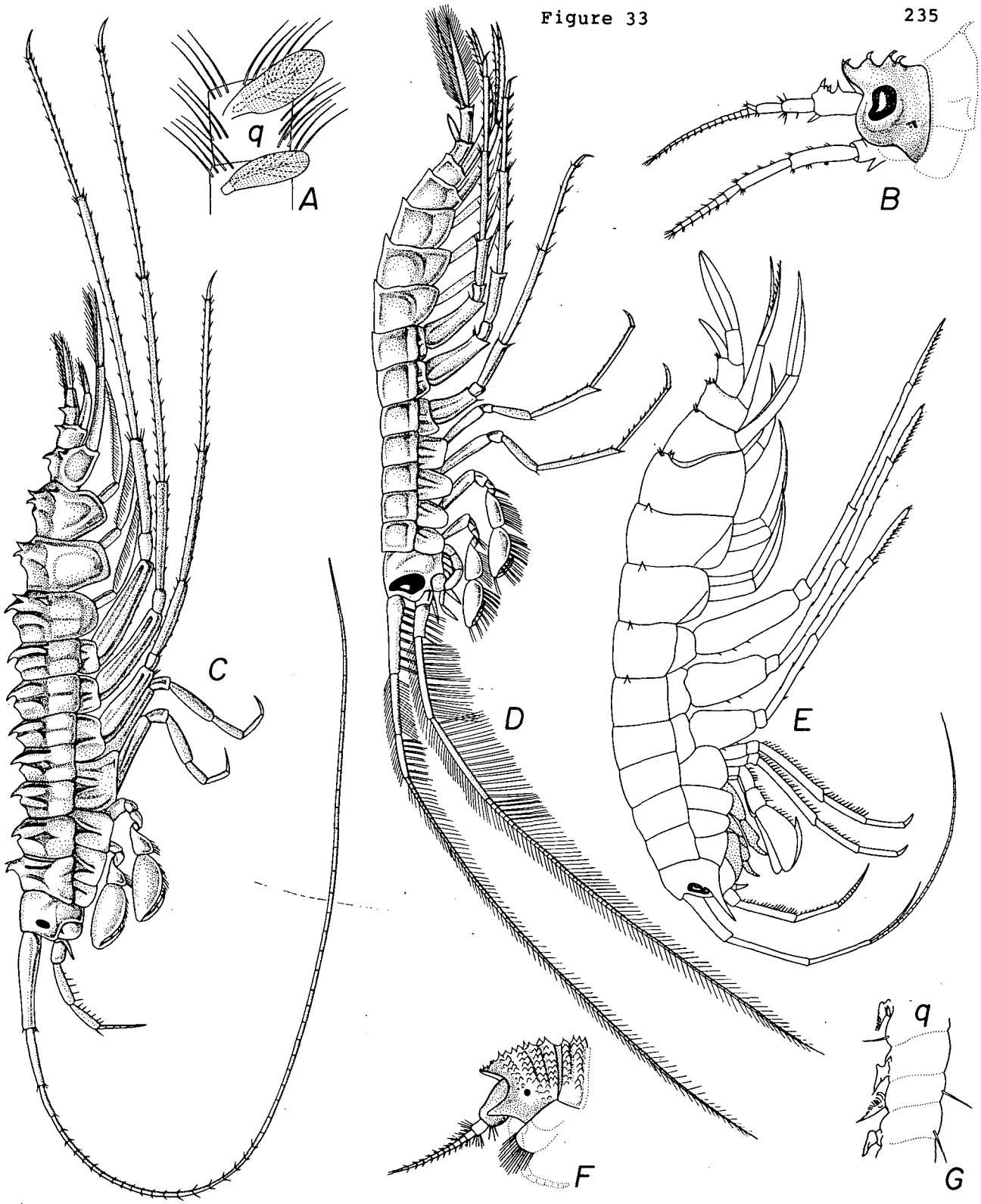


Figure 33. A, Calceoli of Austrogammarus haasei; B, Brandtia lata; C, Plesiogammarus zienkowiczi; D, Abyssogammarus sarmatus; E, Ceratogammarus dybowskii; F, Hyalellopsis taczankowskii; G, calceoli of Eoniphargus kozimai.

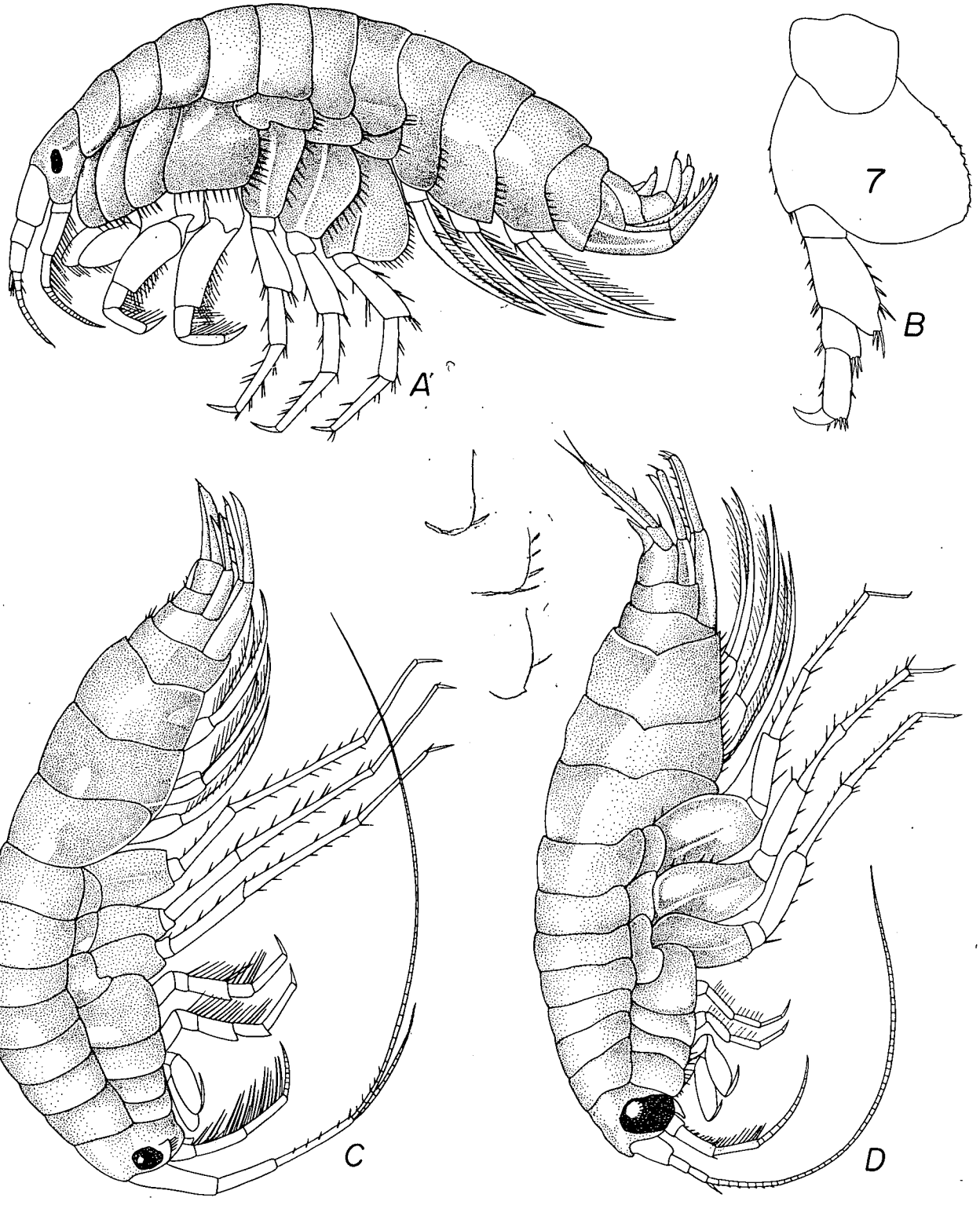


Figure 34. A, *Crypturopus pachytus*; B, *Behningiella brachypus*; C, *Poekilogammarus pictus*; D, *Echiuropus rhodophthalmus*.

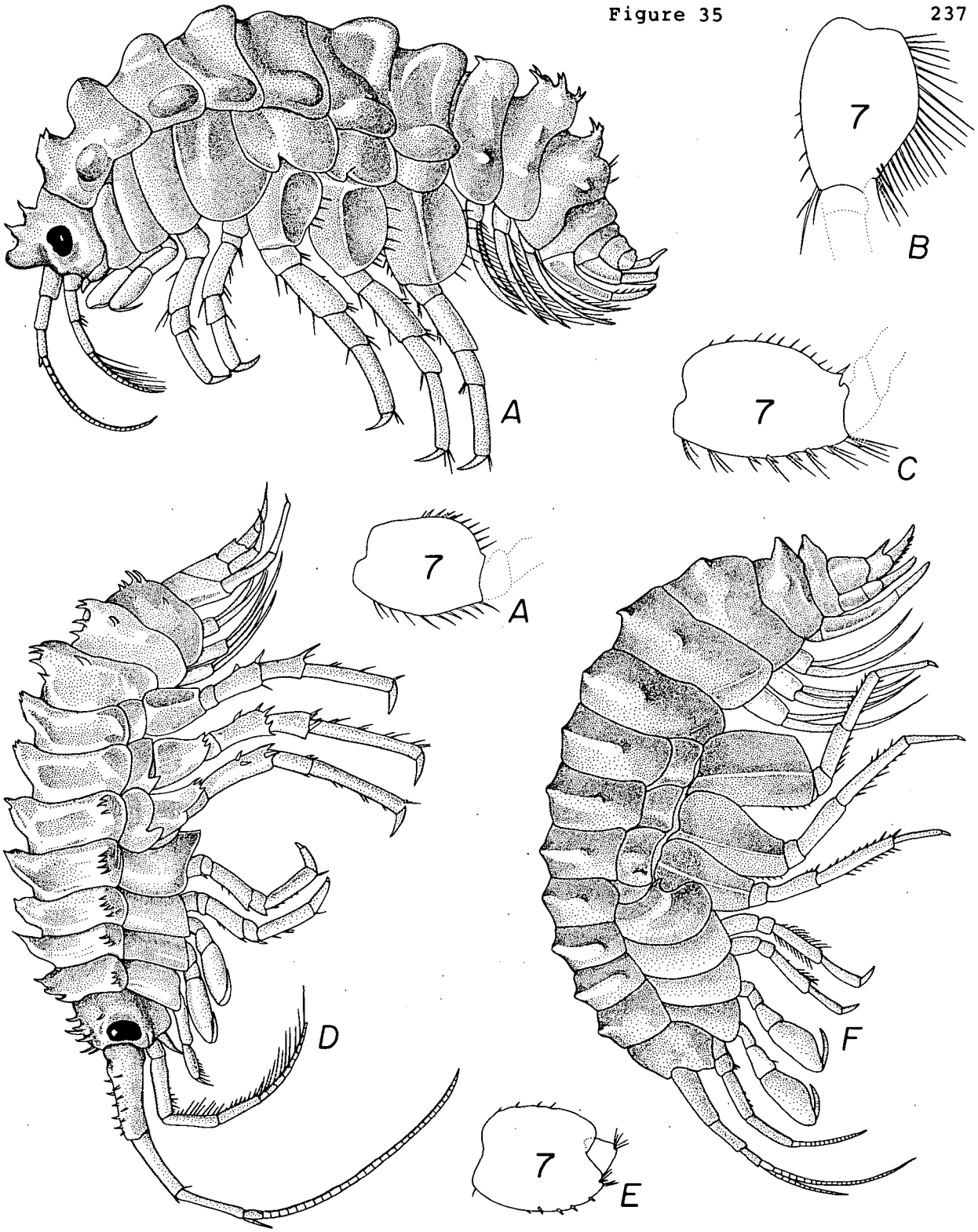


Figure 35. A, Brandtia lata; B, Micruropus vortex; C, Eurybiogammarus fuscus; D, Spinacanthus parasiticus; E, Shablogammarus shablensis; F, Coniurus radoschkowskii.

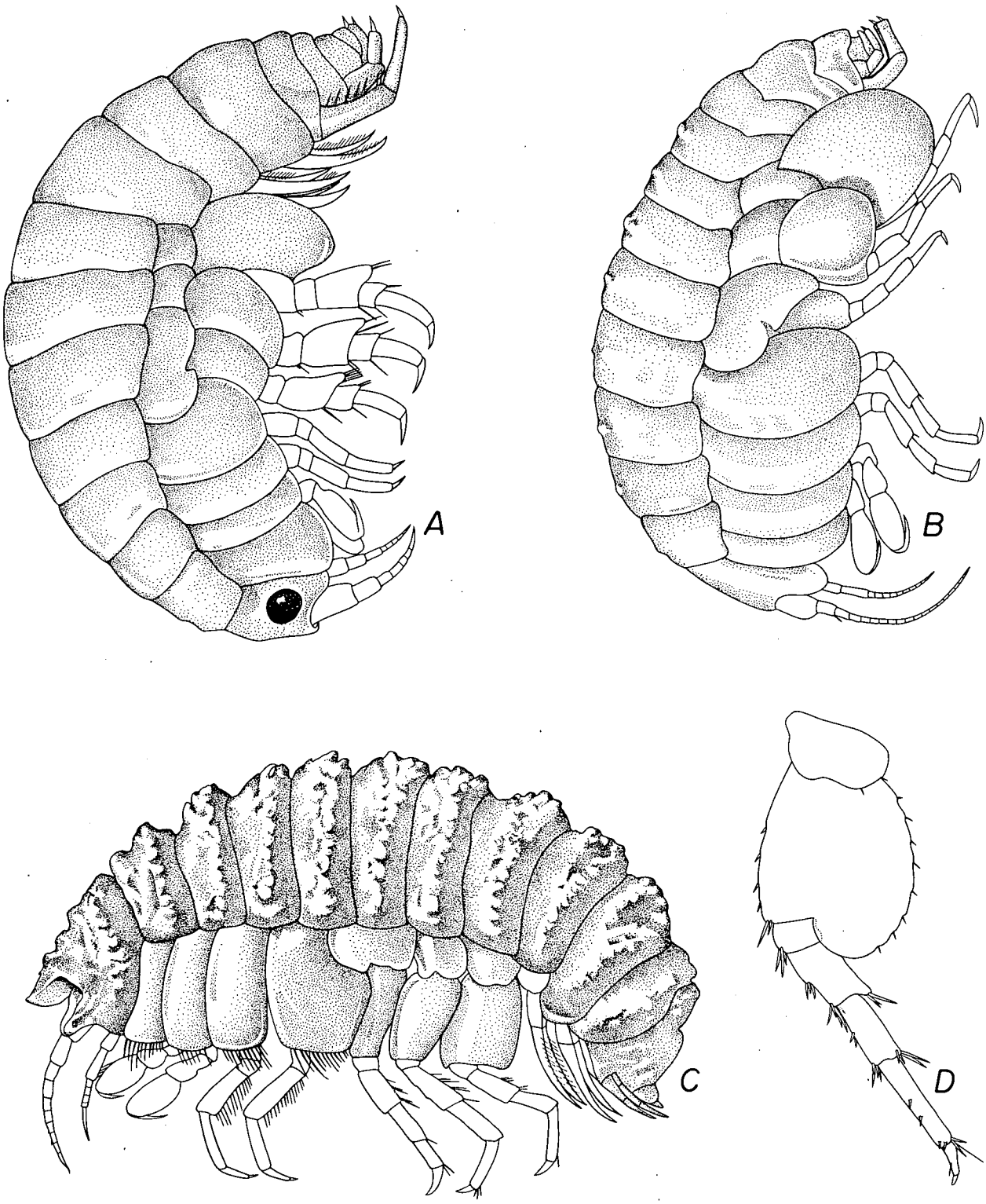


Figure 36. A, Hyalellopsis czyrnianskii; B, Gammarosphaera insularis; C, Hyalellopsis taczanowskii; D, Shablogammarus shablensis.

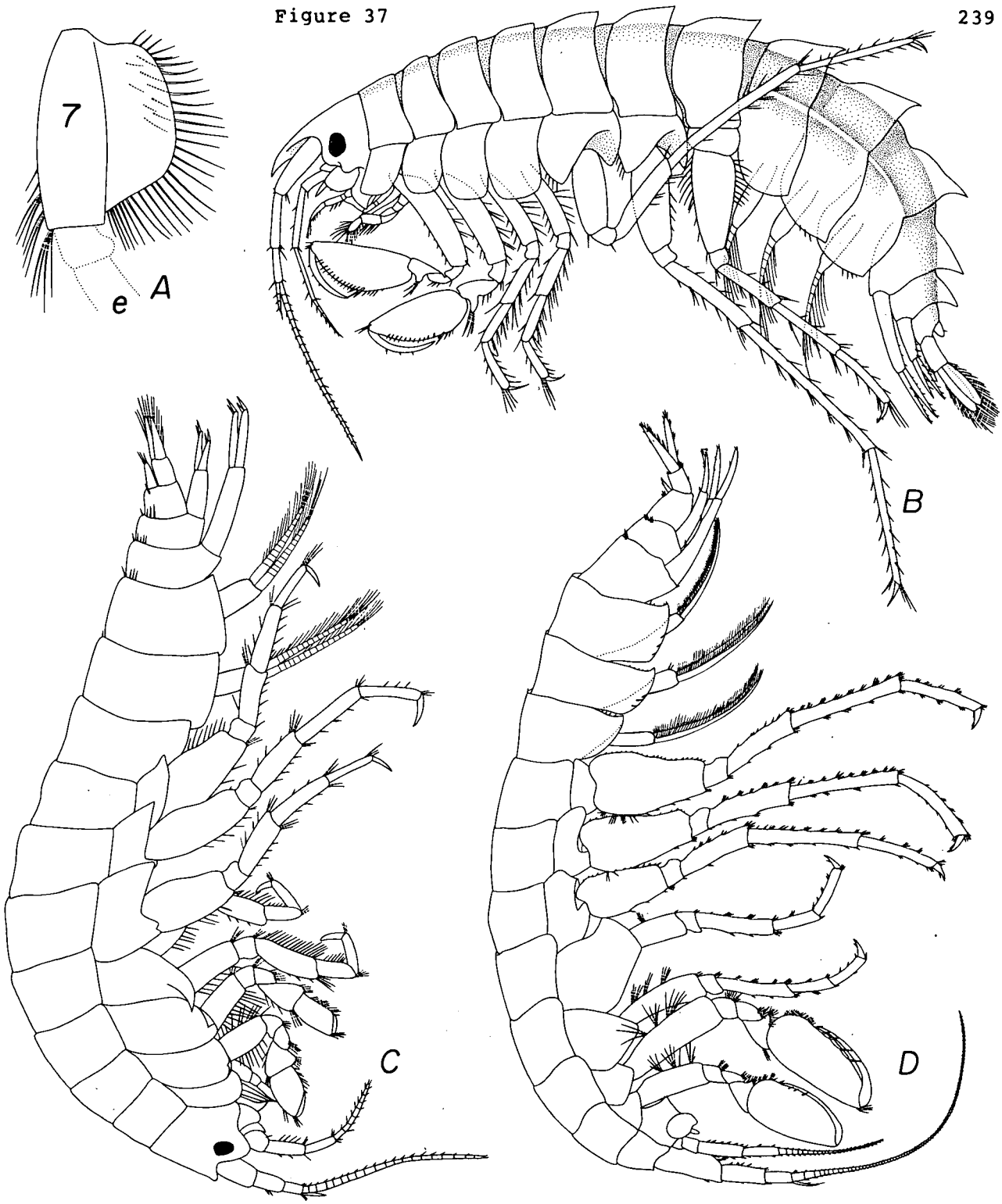


Figure 37. A, Micruropus glaber; B, Gammaracanthus loricatus; C, Issykogammarus hamatus; D, Typhlogammarus mrazeki.

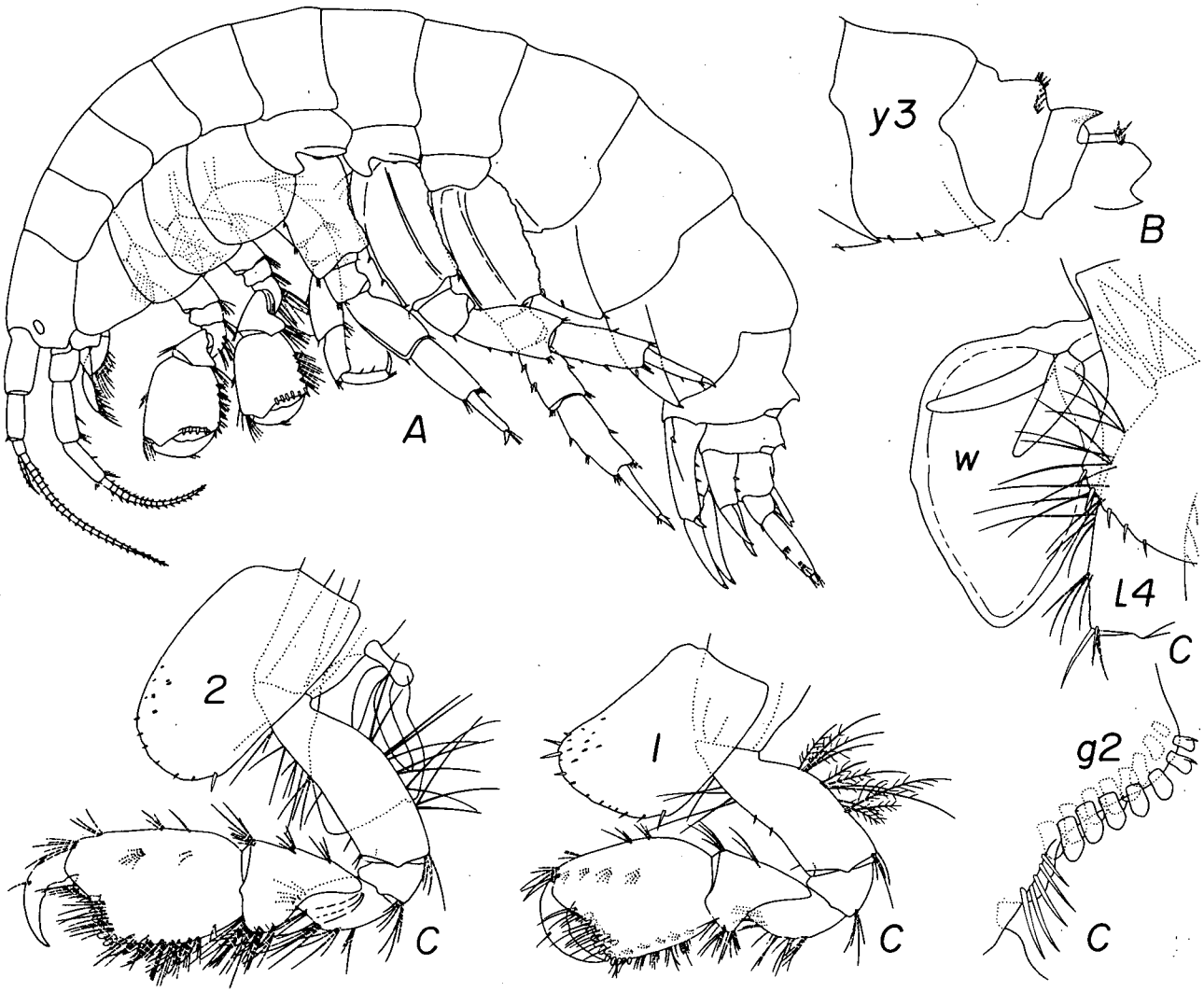


Figure 38. A, Barrowgammarus macginitei; B, Anisogammarus pugettensis; C, Eogammarus confervicolus; on C note accessory gills on coxal gill "w".

T.R.R. Stebbing

Rev. Stebbing was a contemporary of G.O. Sars between about 1870 and 1925 and was perhaps the second greatest amphipod student in history. Stebbing had a world view of the group not gained by Sars. Stebbing had complete mastery of the literature since the 1600's and a mastery of every language so that he was able to compile his classic bibliography published in the Challenger volumes in 1888. Then he summarized the taxonomy of the world Gammaridea in his 1906 classic "Das Tierreich." Because his compilations of the literature gave him recognition of the diversity of form in the freshwater fauna, Stebbing described between 1899 and 1906 most of the freshwater genera known up to that time. In contrast, Stebbing wrote almost nothing on the species of freshwater amphipods.

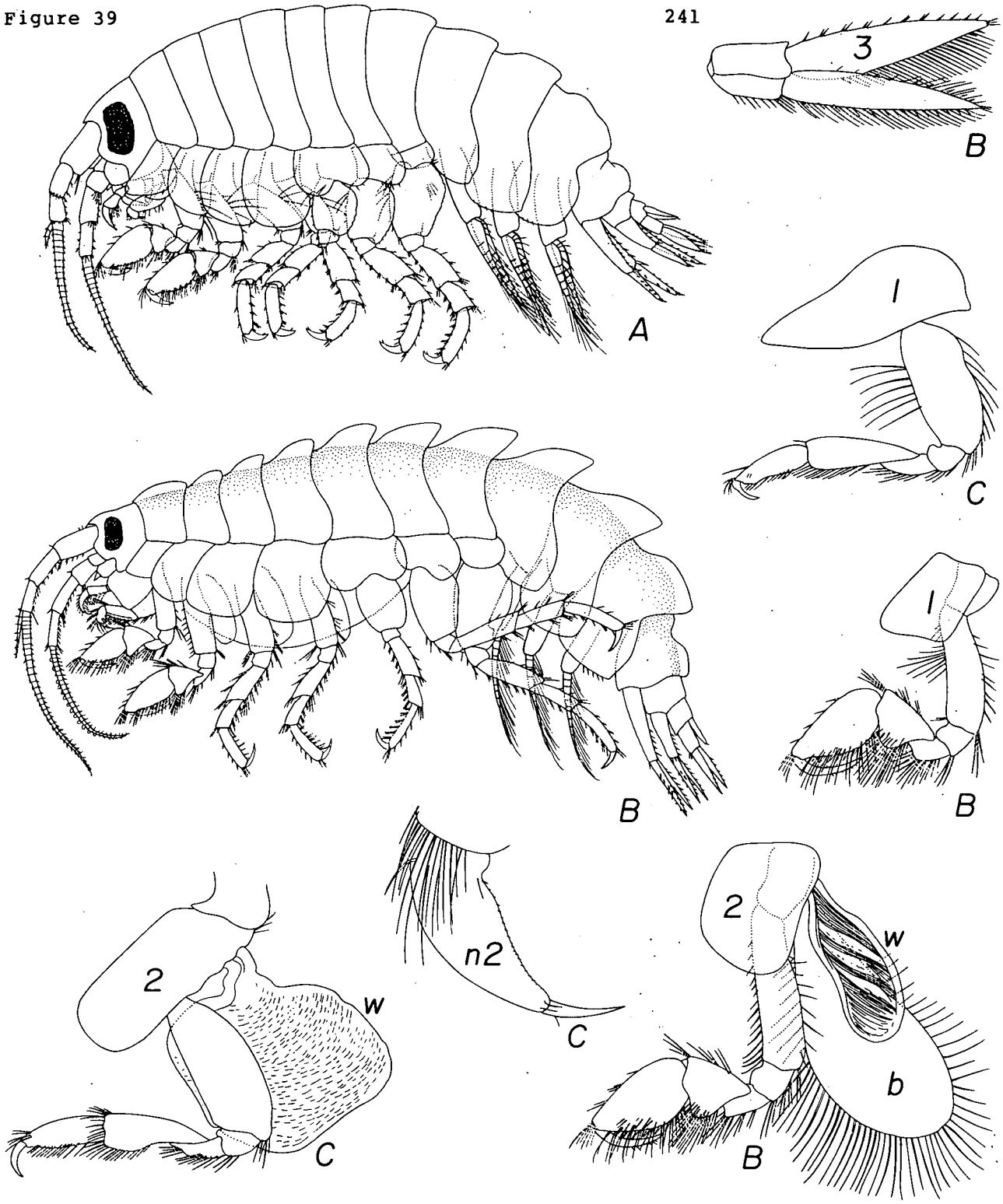


Figure 39. A, Gammarellus angulosus; B, Gammarellus homari; C, Weyprechtia heuglini.

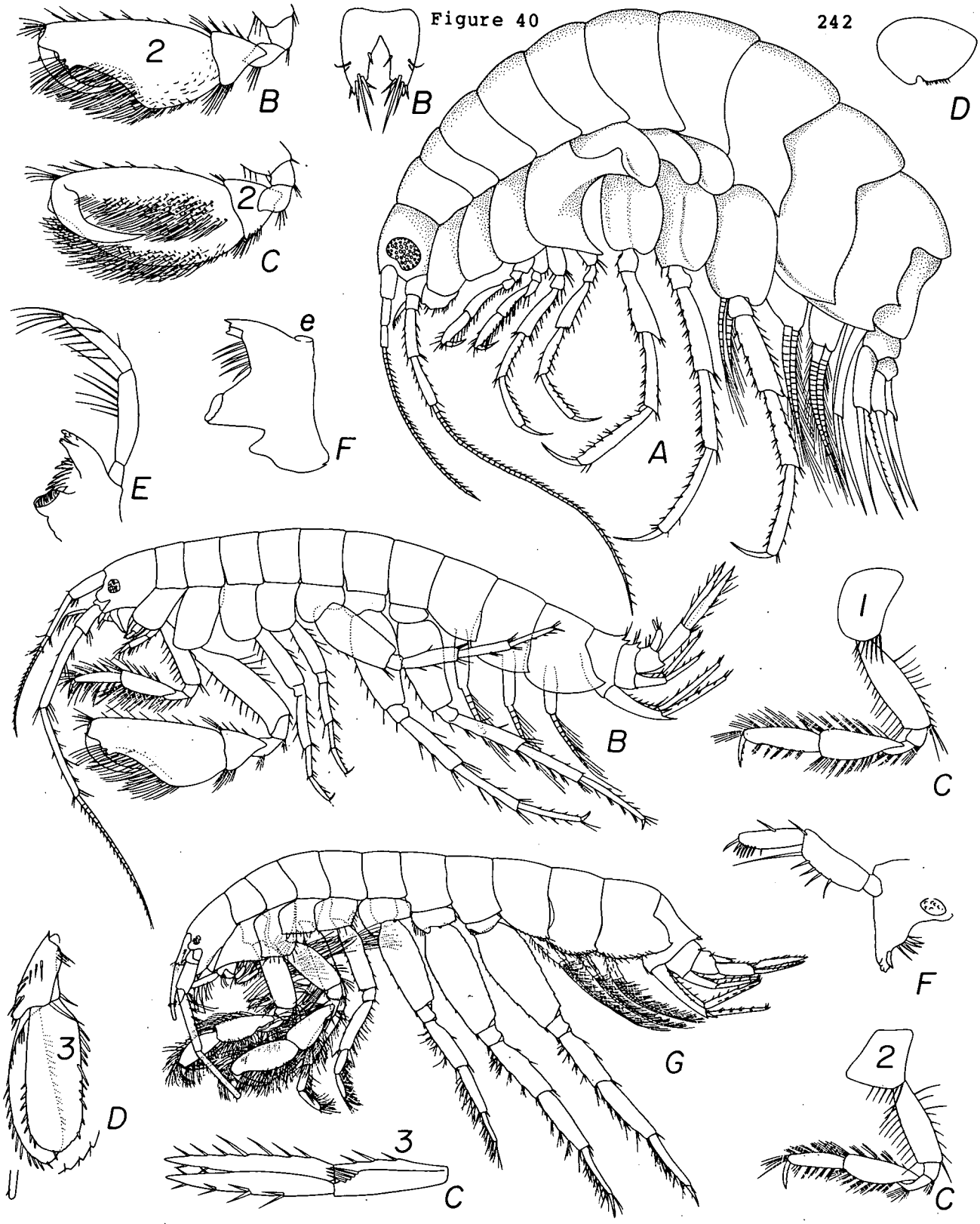


Figure 40. A, Weyprechtia heuglini; B, Cheirocratus intermedius; C, Cheirocratus sundevalli; D, Megaluropus longimerus; E, Hornellia incerta; F, Hornellia sinuata; G, Casco bigelowi.

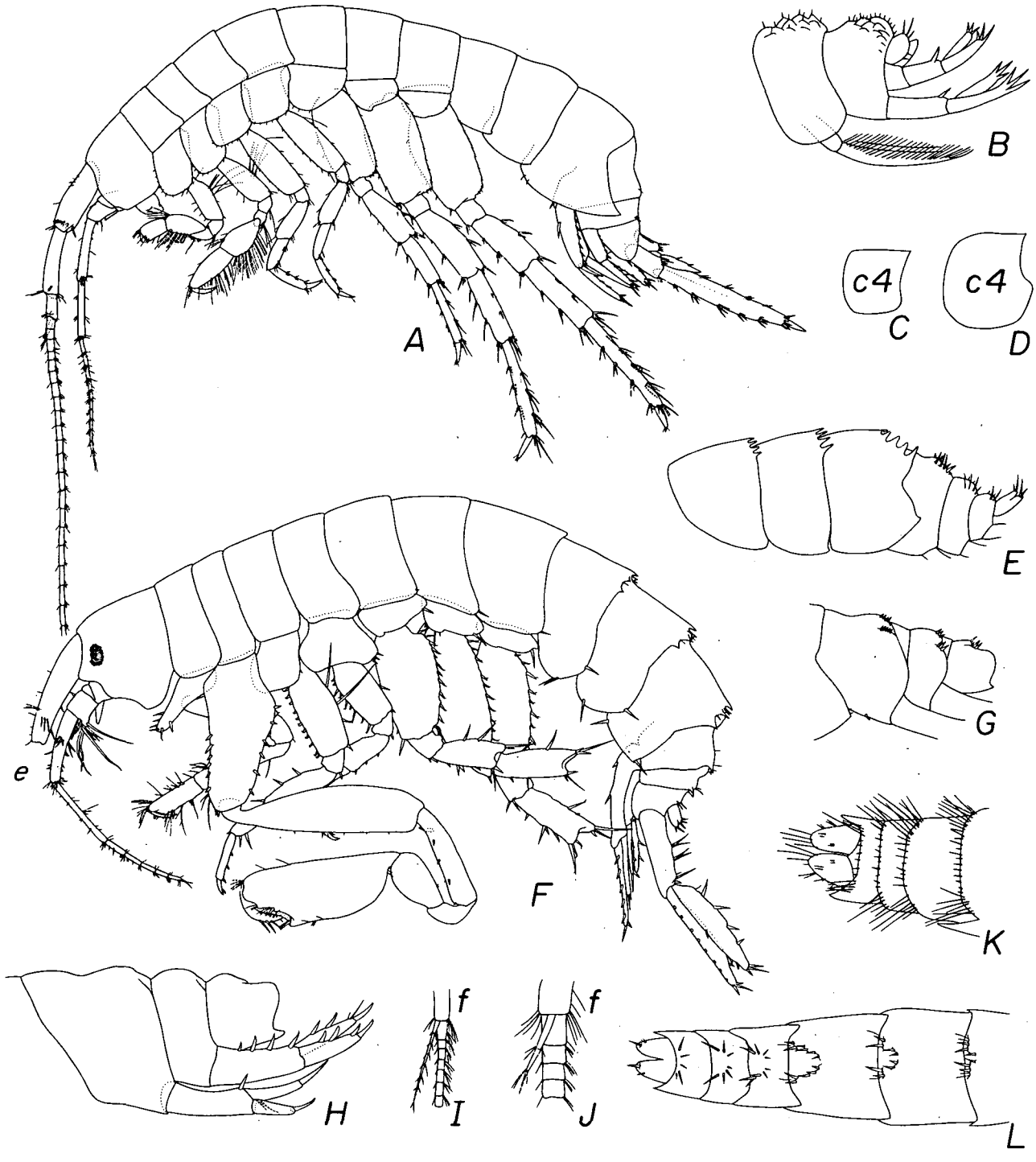


Figure 41. A, Dulzura sal; B, Hyalellopsis taczanowskii; C, Maera othonis; D, Gammarellus homari; E, Mesogammarus melitoides; F, Jerbarnia mechochira; G, Locustogammarus locustoides; H, Neogammarus nudus; I, Echinogammarus marinus; J, Elasmopus rapax; K, Austrogammarus australis; L, Ramellogammarus oregonensis.

Figure 42

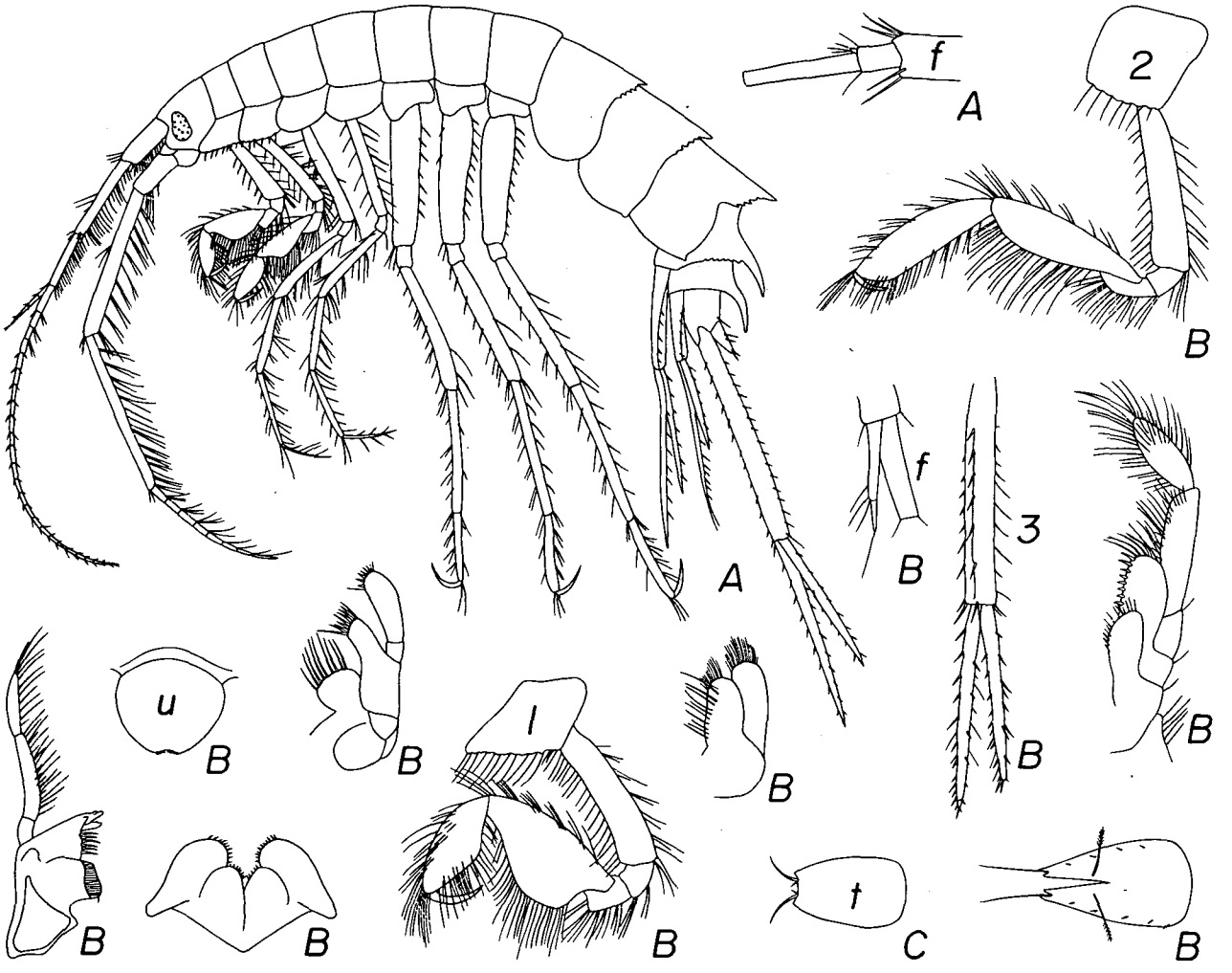
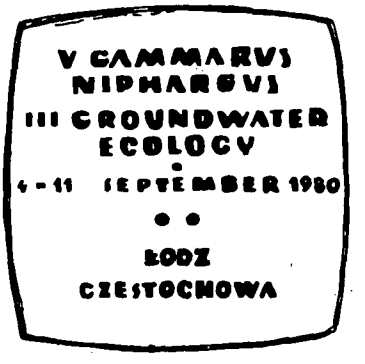


Figure 42. A, Melphidippa macra; B, Melphidippa goesi; C, Melphisana bola.



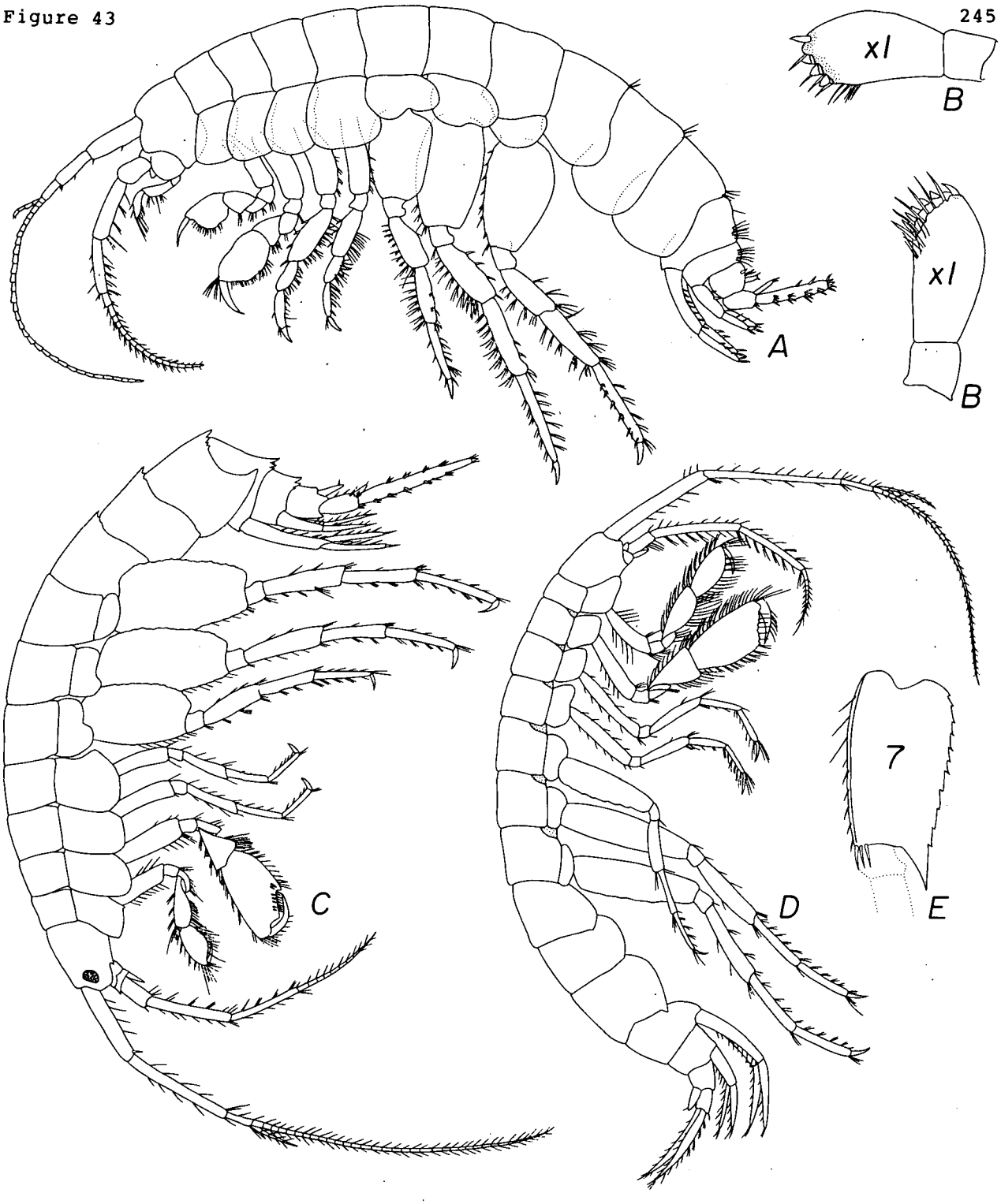


Figure 43. A, Paramelita barnardi; B, Gammarus mucronatus, 2 sides; C, Melita dentata; D, Maera loveni; E, Odontogammarus calcaratus.

Figure 44

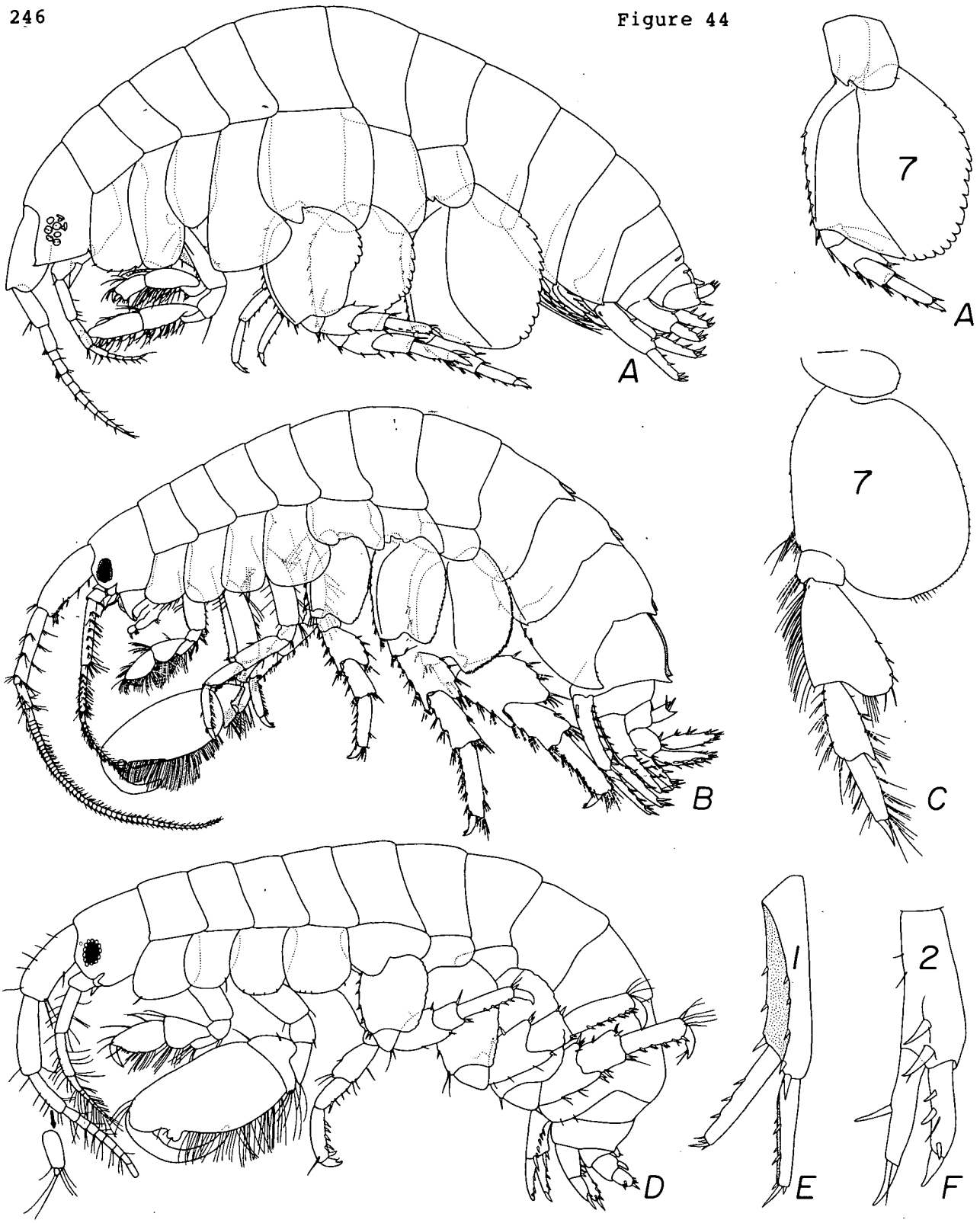


Figure 44. A, Gammarella mokari; B, Mallacoota diemenensis; C, Victoriopisa australiensis; D, Beaudettia palmeri; E, Austrogammarus australis; F, Neogammarus festae.

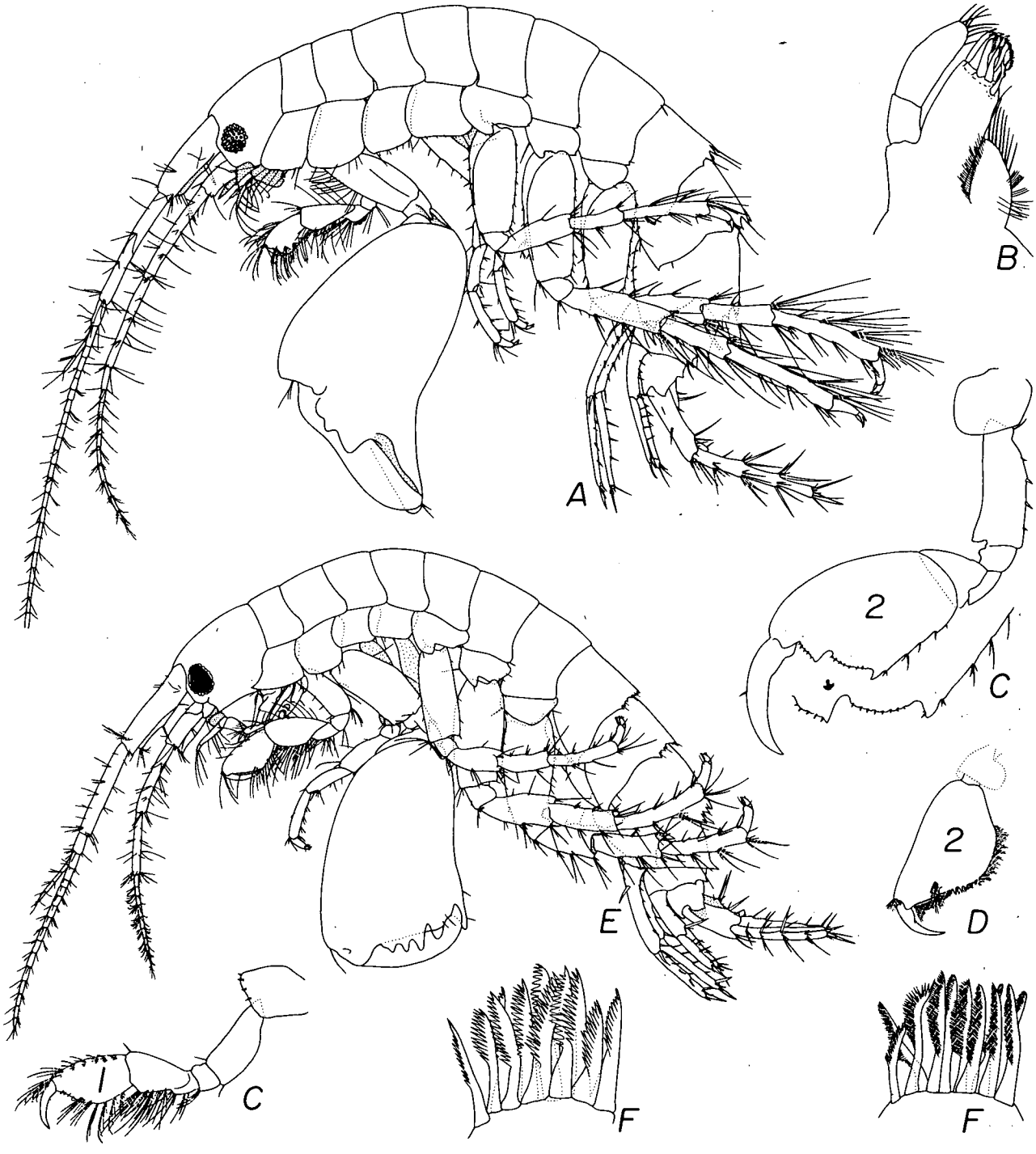


Figure 45. A, Dulichiella ?appendiculata; B, Typhlogammarus mrazeki; C, Parapherusa crassipes; D, Pallasea cancellus; E, Ceradocus hawaiensis; F, Accubogammarus algor, opposite sides of maxilla 1.

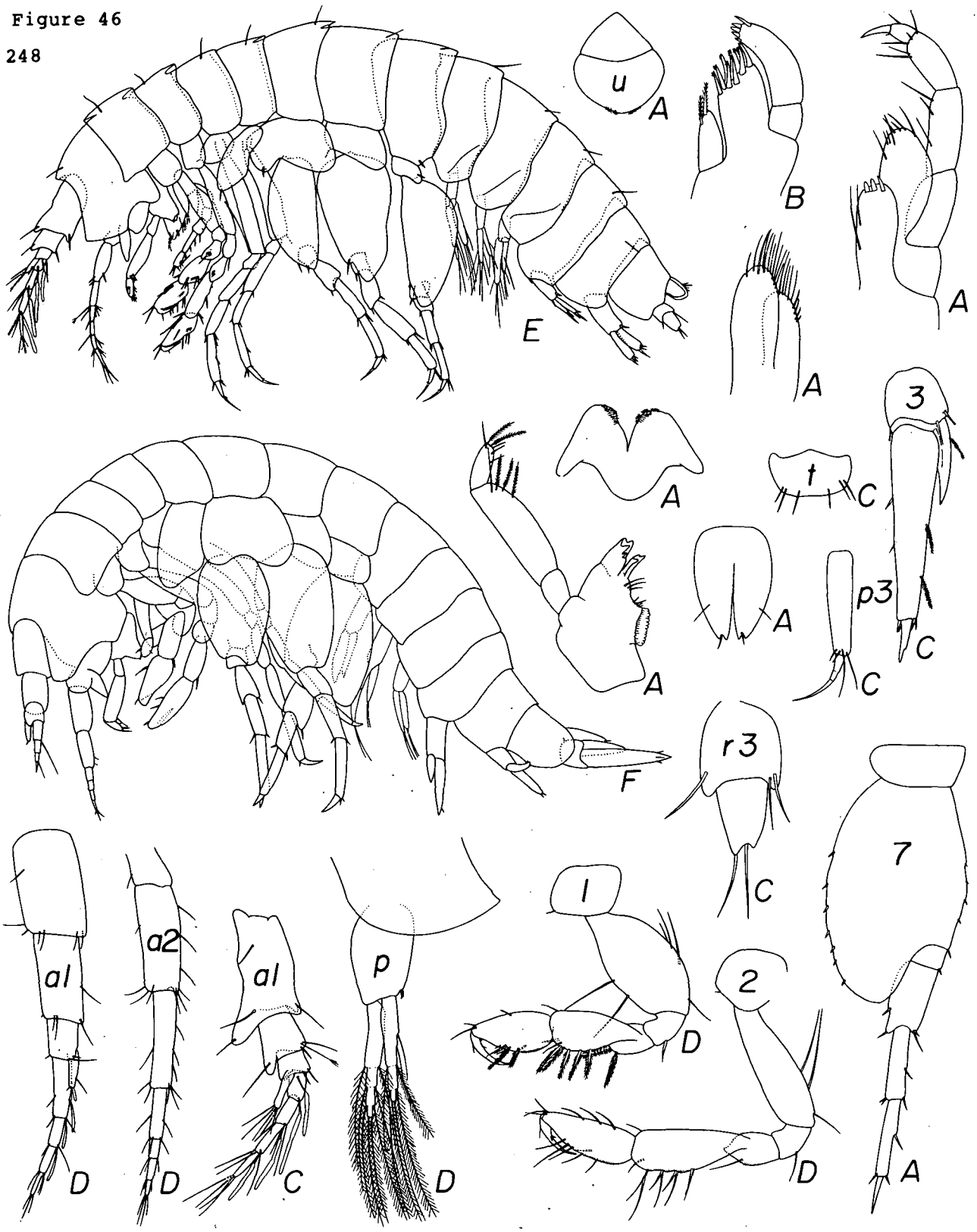


Figure 46. A, Salentinella gracillima; B, Salentinella capensis; C, Parasalentinella rouchi; D, Salentinella angelieri; E, Parasalentinella rouchi; F, Salentinella delamarei.

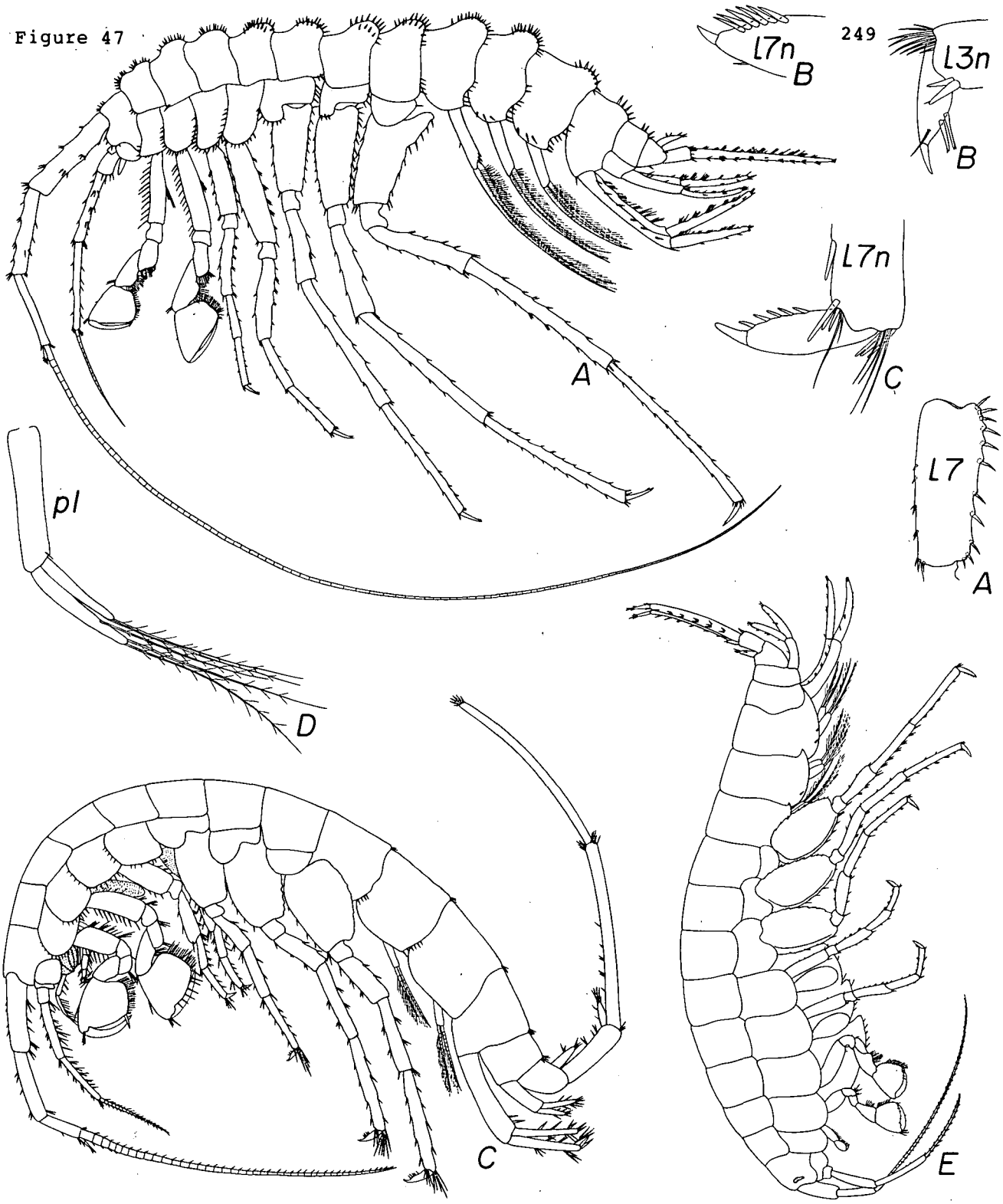


Figure 47. A, Niphargus balcanicus; B, Phreatogammarus fragilis; C, Niphargus ladmiraulti; D, Kergueleniola macra; E, Niphargus valachicus.

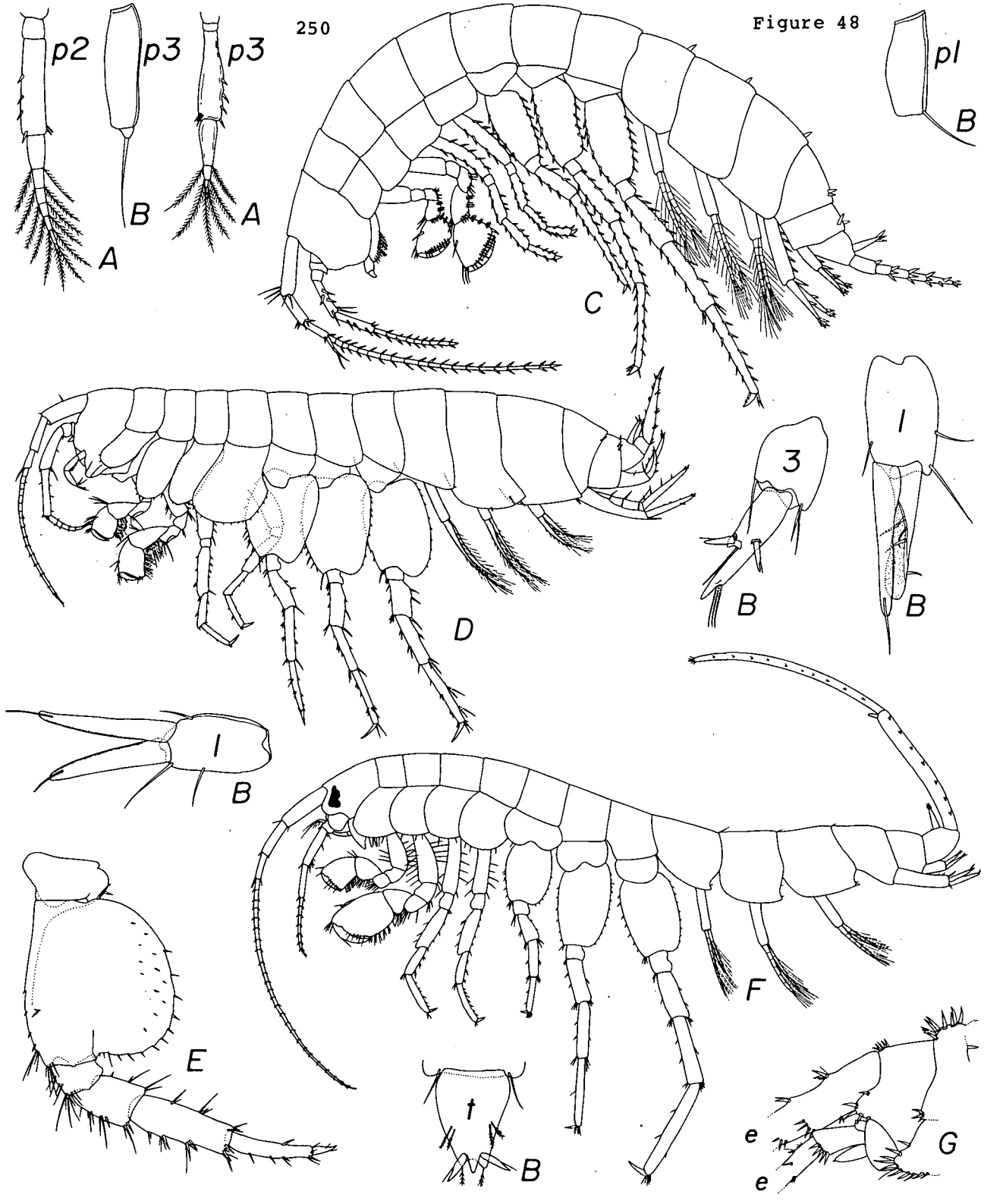


Figure 48. A, Paracrangonyx compactus; B, Pseudingolfiella chilensis; C, Haploginglymus bragnai; D, Niphargopsis skopljensis; E, Gammaroporeia alaskensis; F, Pseudoniphargus africanus; G, Niphargus balcanicus, head.

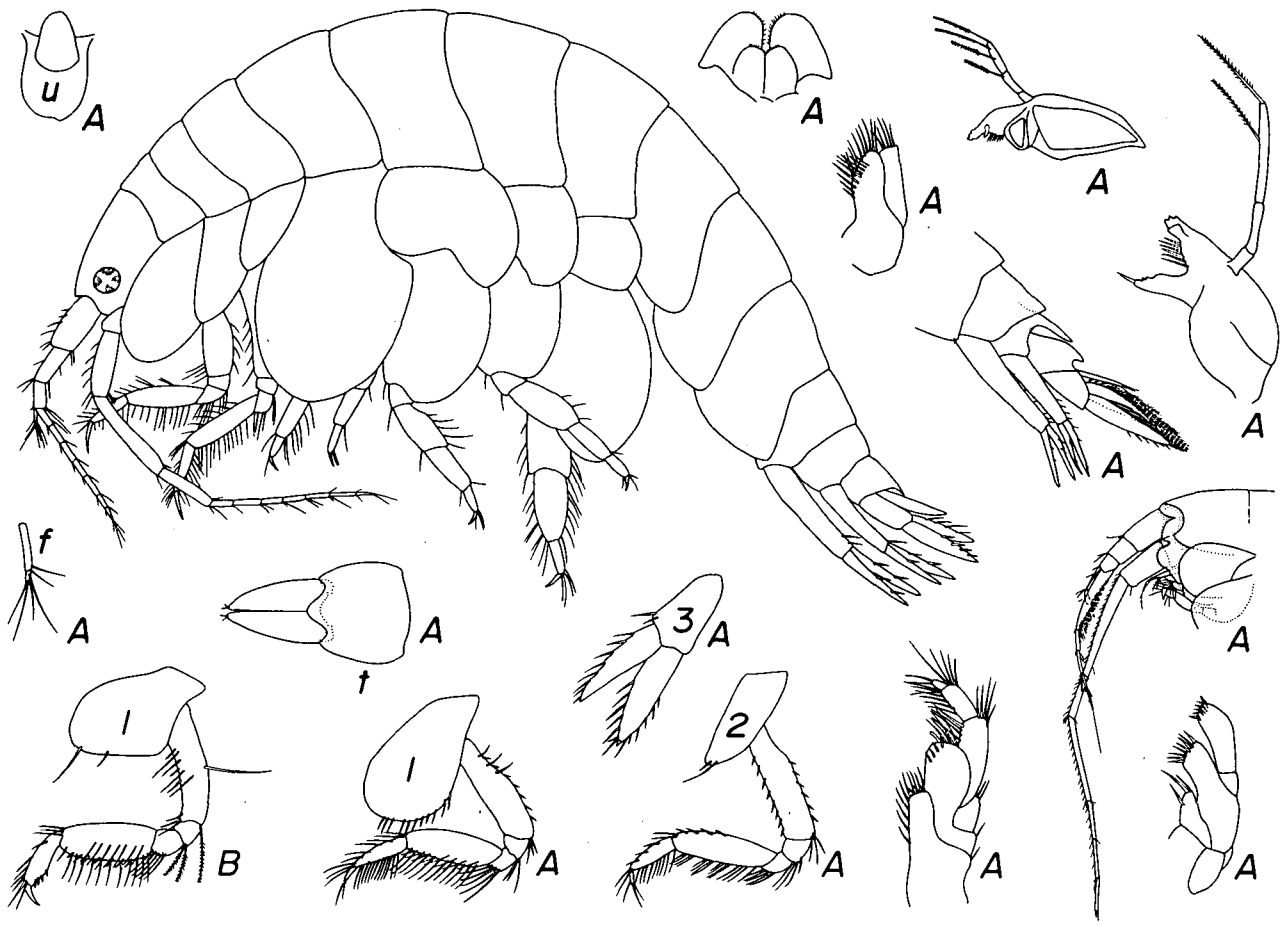


Figure 49. A, Argissa hamatipes; B, Argissa stebbingi.

B.N. Dybowsky

Dybowsky, a Pole exiled to Siberia by the Tsar, was the founder of the Amphipodan Fauna of Lake Baikal, one of the most important descriptive zoological works ever published (1874). This fascinating Baikalian fauna, now numbering about 300 species in about 45 genera, is one of the great aquatic swarms. Fifty years later, in 1924-27, he reviewed his work in a publication of the Polish Academy of Science and Letters.

V.K. Sowinsky

Sowinsky studied both the PontoCaspian and the Baikalian faunas. The culmination of his work in amphipods resulted in the 1915 work on Baikal, which was the first major post-Dybowskian treatment of the fauna, except, of course, for the work of Garjajeff and the relegation of many of its species into new genera by Stebbing (1899 ff.).

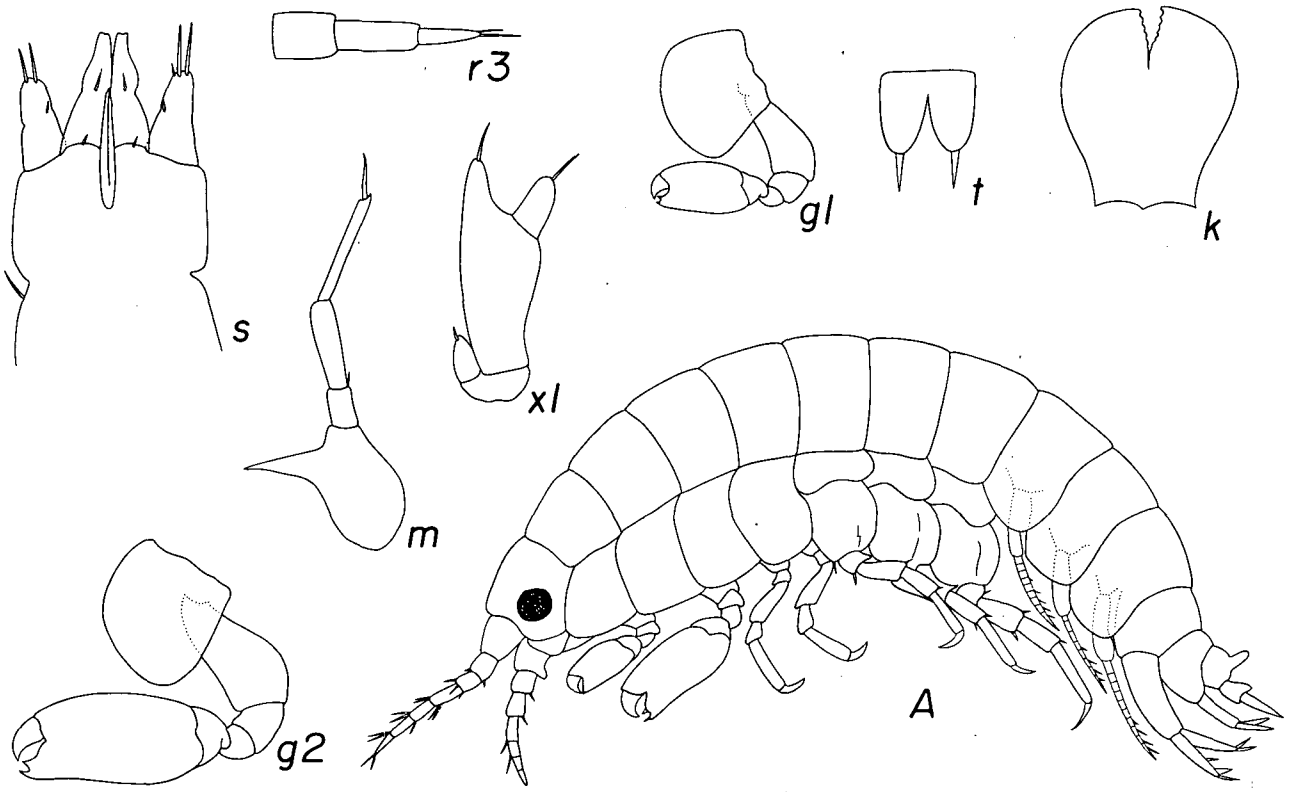


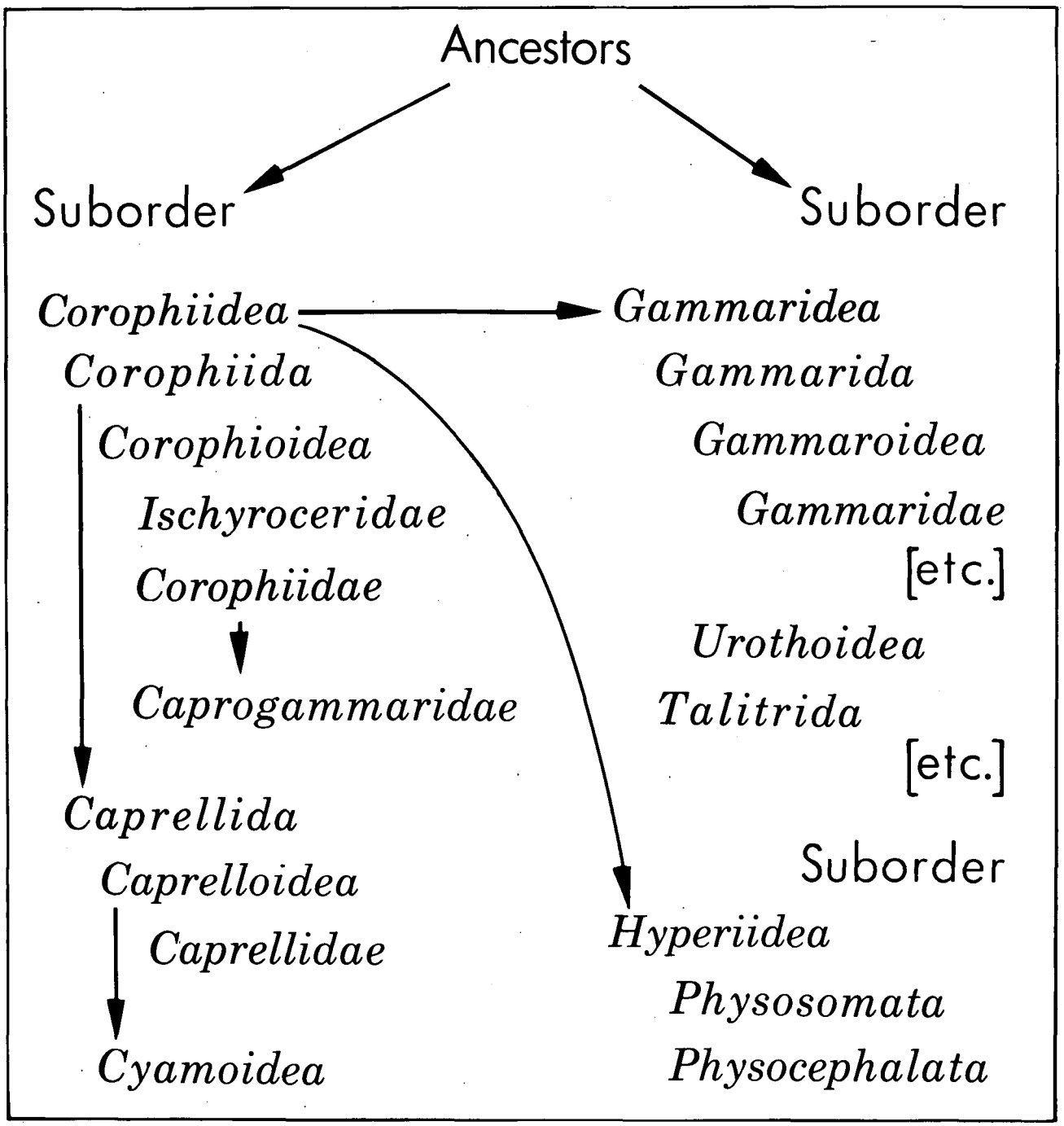
Figure 50. A, Caspicola knipowitschi. k = lower lip.

Ed. Chevreux

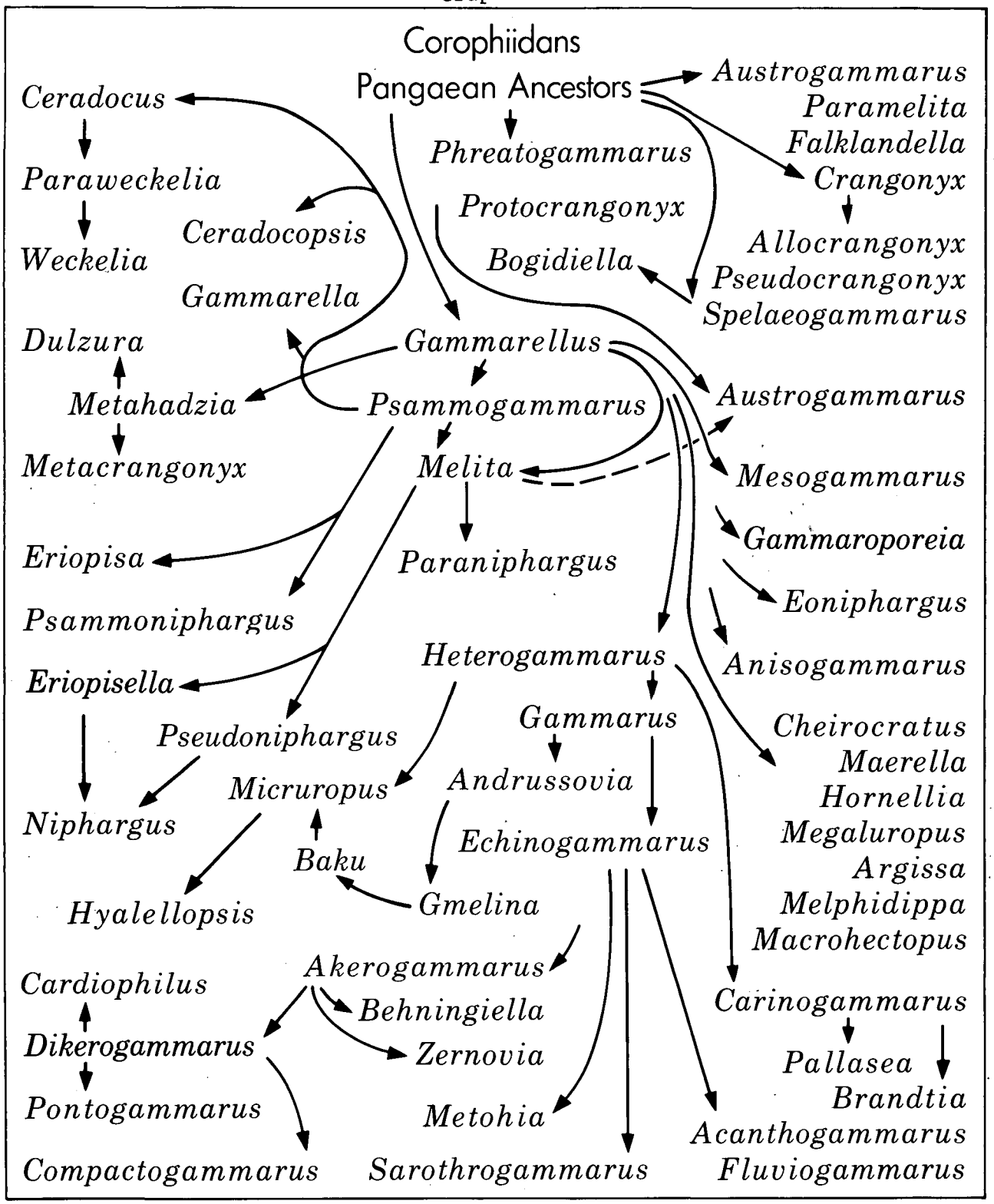
The great French carcinologist, Ed. Chevreux, worked on amphipods between the middle 1880's and the mid-1920's. Though his major contributions were to the marine fauna, especially in his classic "Faune de France," 1925, with Louis Fage, and vital studies of tropical Pacific island chains, he treated many new freshwater species from Europe and North Africa. He also was the recipient of occasional freshwater species from exotic places like the Seychelles, South America, Lake Baikal and the Turkestan.

E.W. Sexton

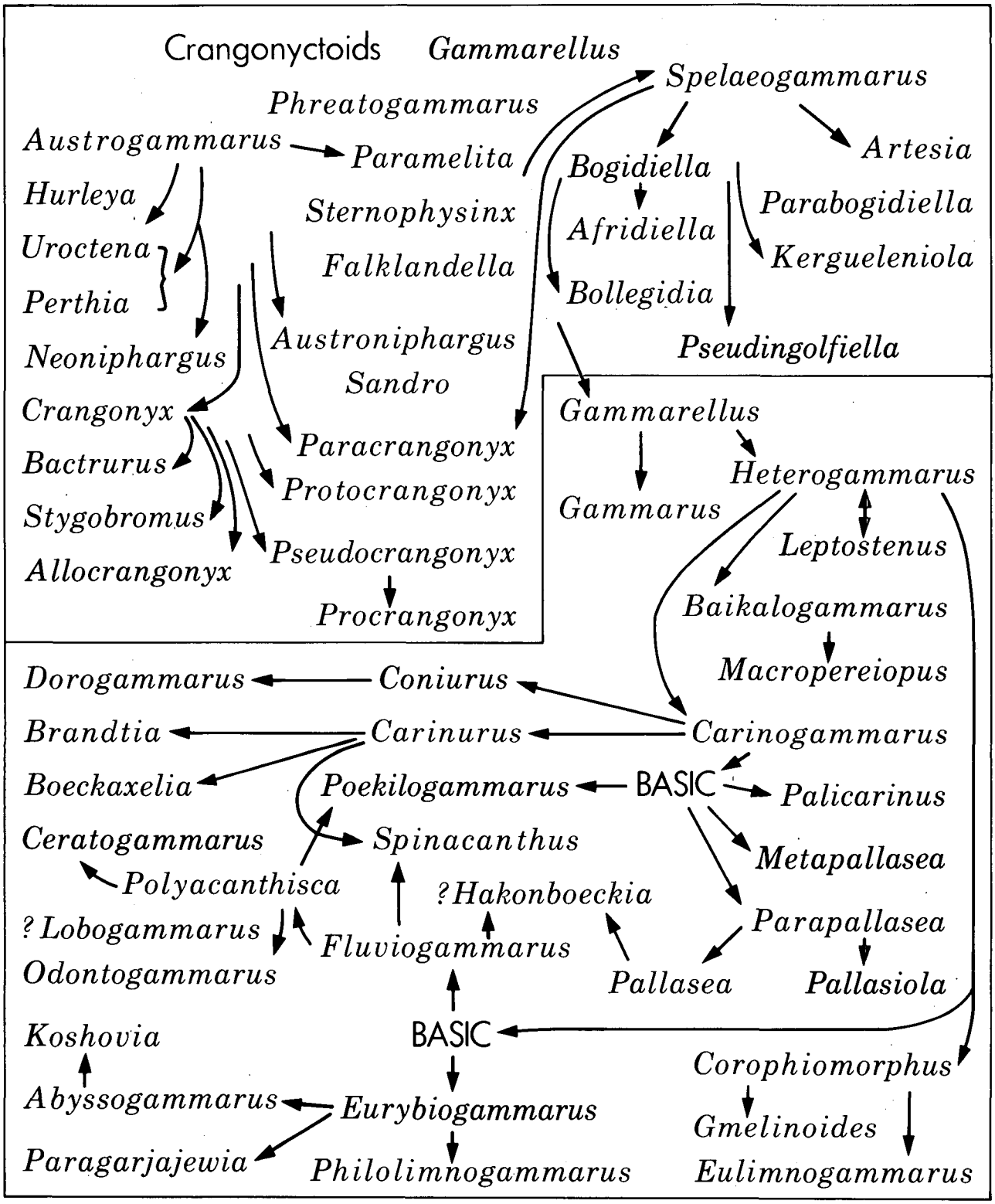
Mrs. Sexton is the founder of the study of behaviour in amphipods. She used Gammarus chevreuxi for nearly 40 years in her Plymouth laboratory starting about 1910. She learned much about moulting, growth stages, variation, phenotypy and ecophenotypy. She and J.S. Huxley did some work on inheritance of eye colour. She began the work necessary to sort out the difficult taxonomy of the seven dominant species of Gammarus in the salt waters of Europe and discovered what became the scourge of Europe, Gammarus tigrinus.



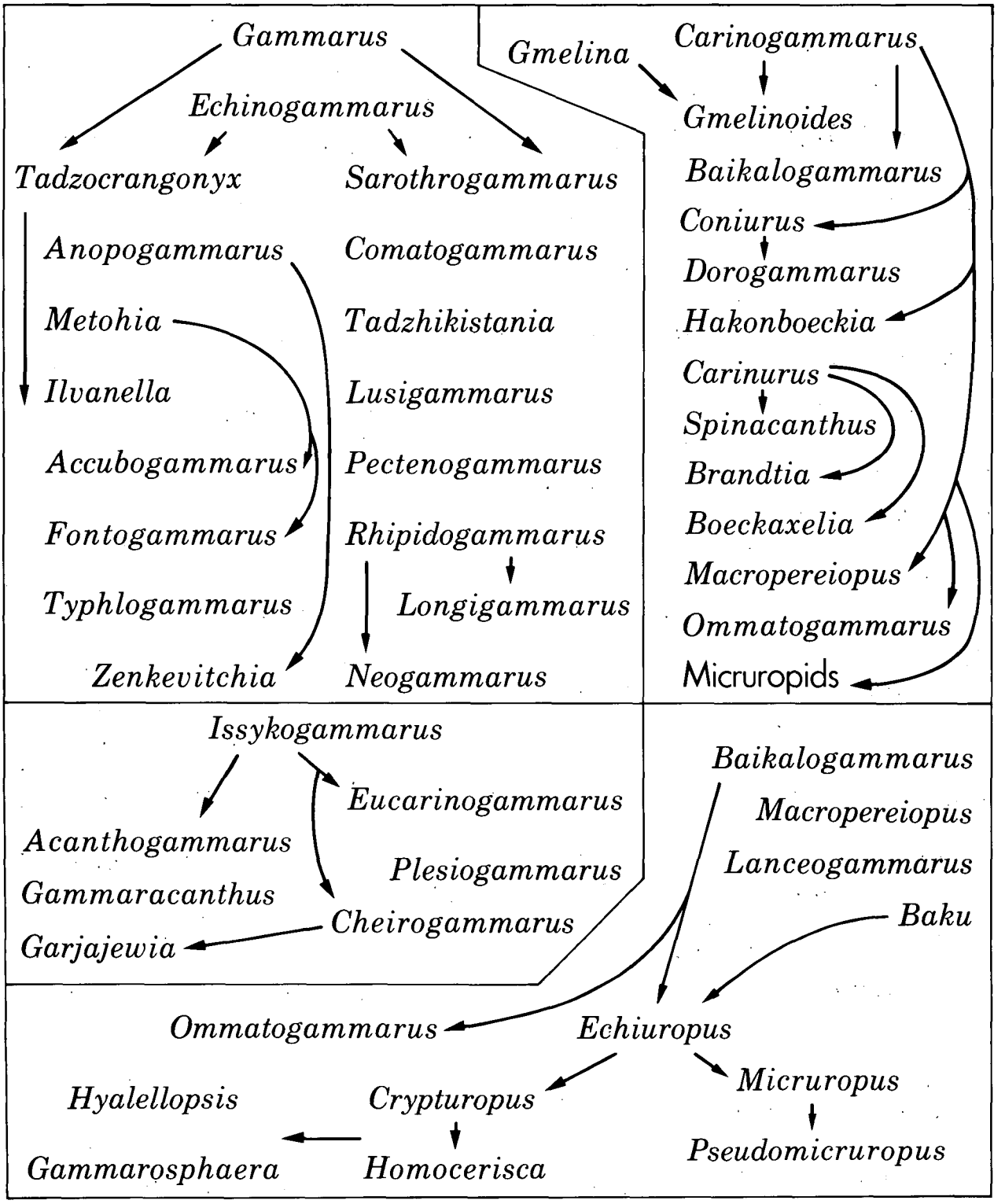
Graph 1. Evolutionary pattern of suborders in Amphipoda with a few major superfamilies or families as examples.



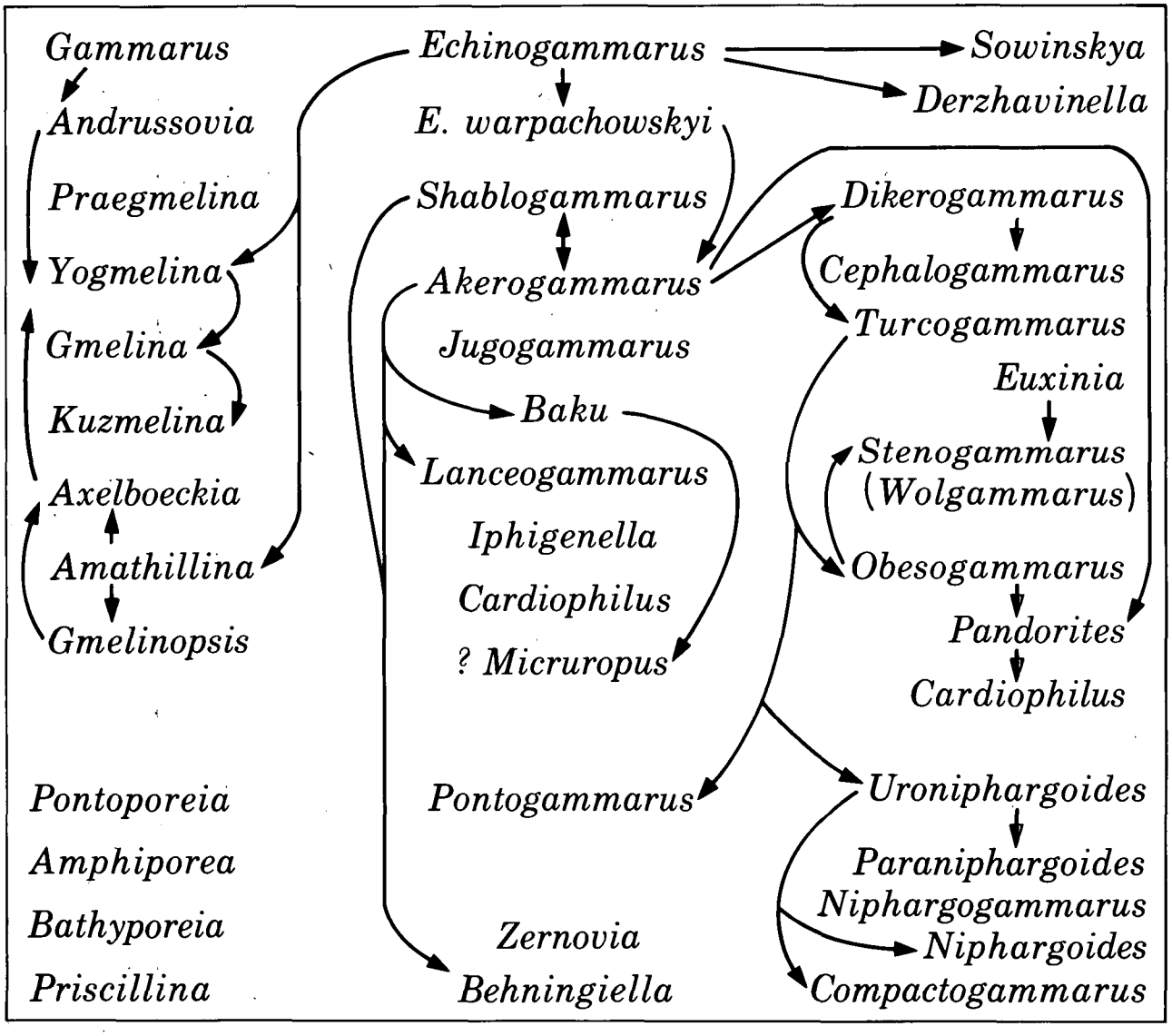
Graph 2. Evolutionary pattern of key genera in Gammaridea of the Gammaridan section. Closest marine-freshwater morphotypes marked by dashes.



Graph 3. Evolutionary pattern of Genera in the Crangonyctoid (upper) and Gammarid (lower) groups.



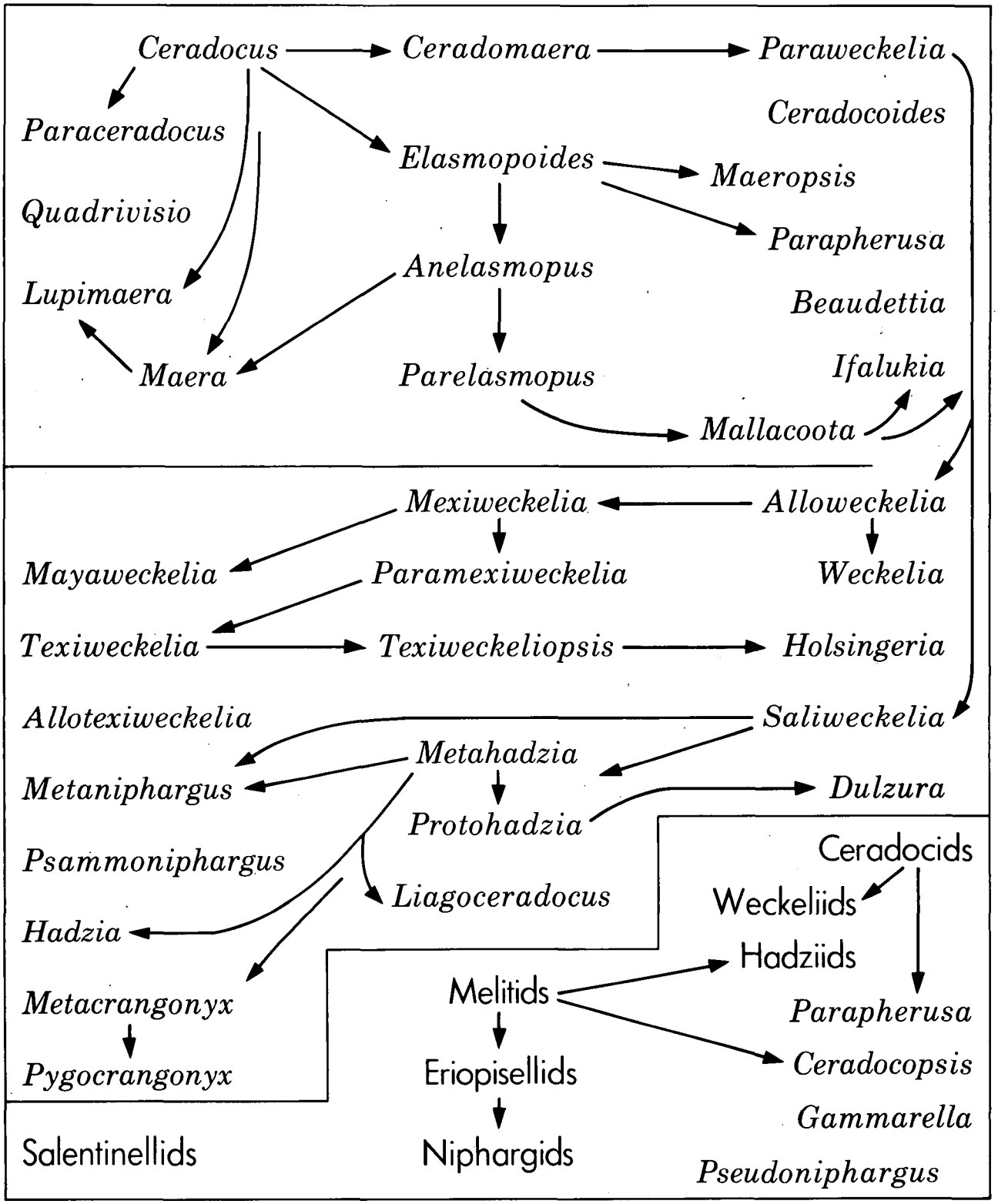
Graph 4. Evolutionary patterns of Gammarus group (upper left), Carinurus (Baikal) group (upper right), Acanthogammarus group (middle left) and Micruropus group (lower).



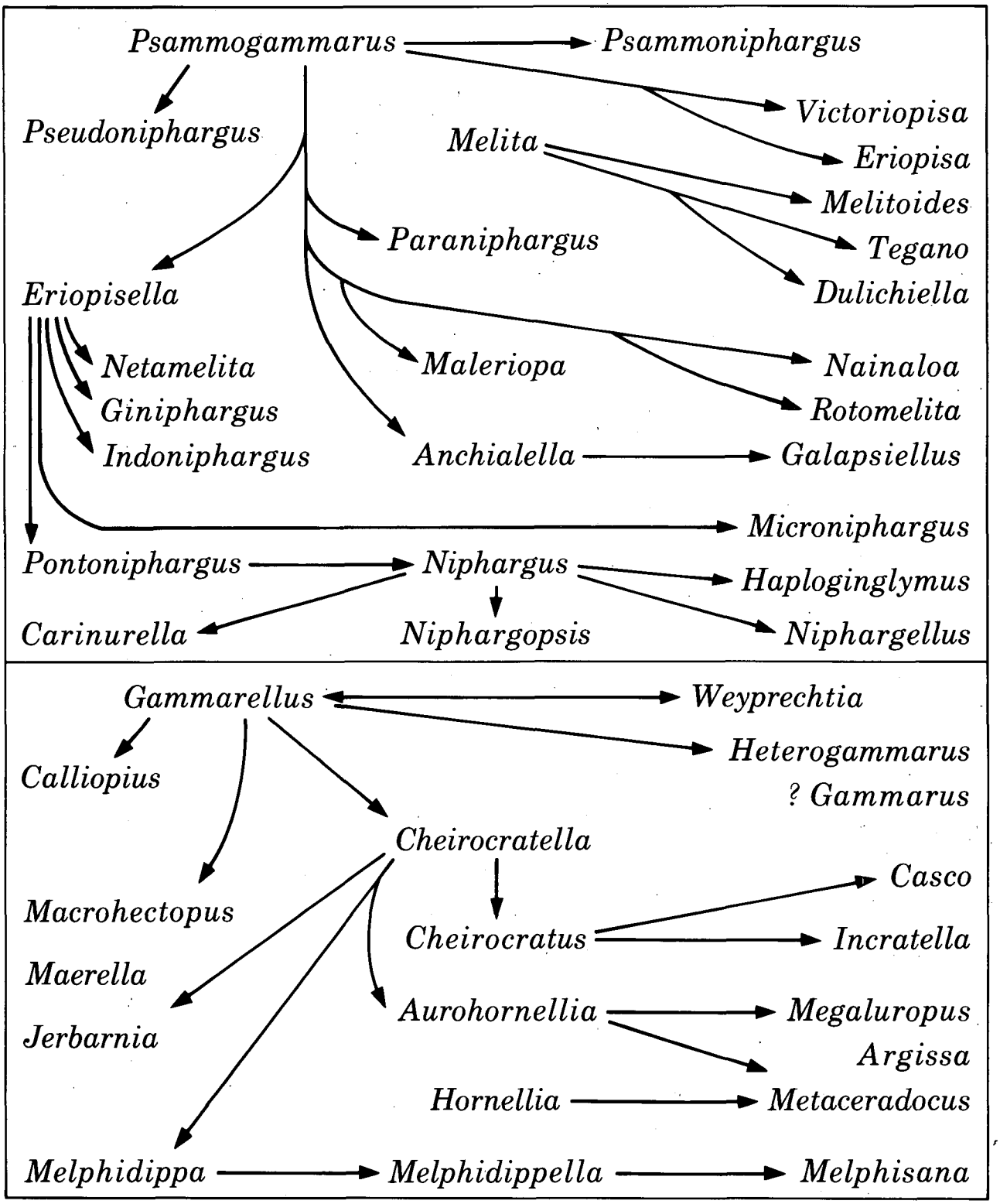
Graph 5. Evolutionary pattern of PontoCaspian genera.

Legend for Caption Description

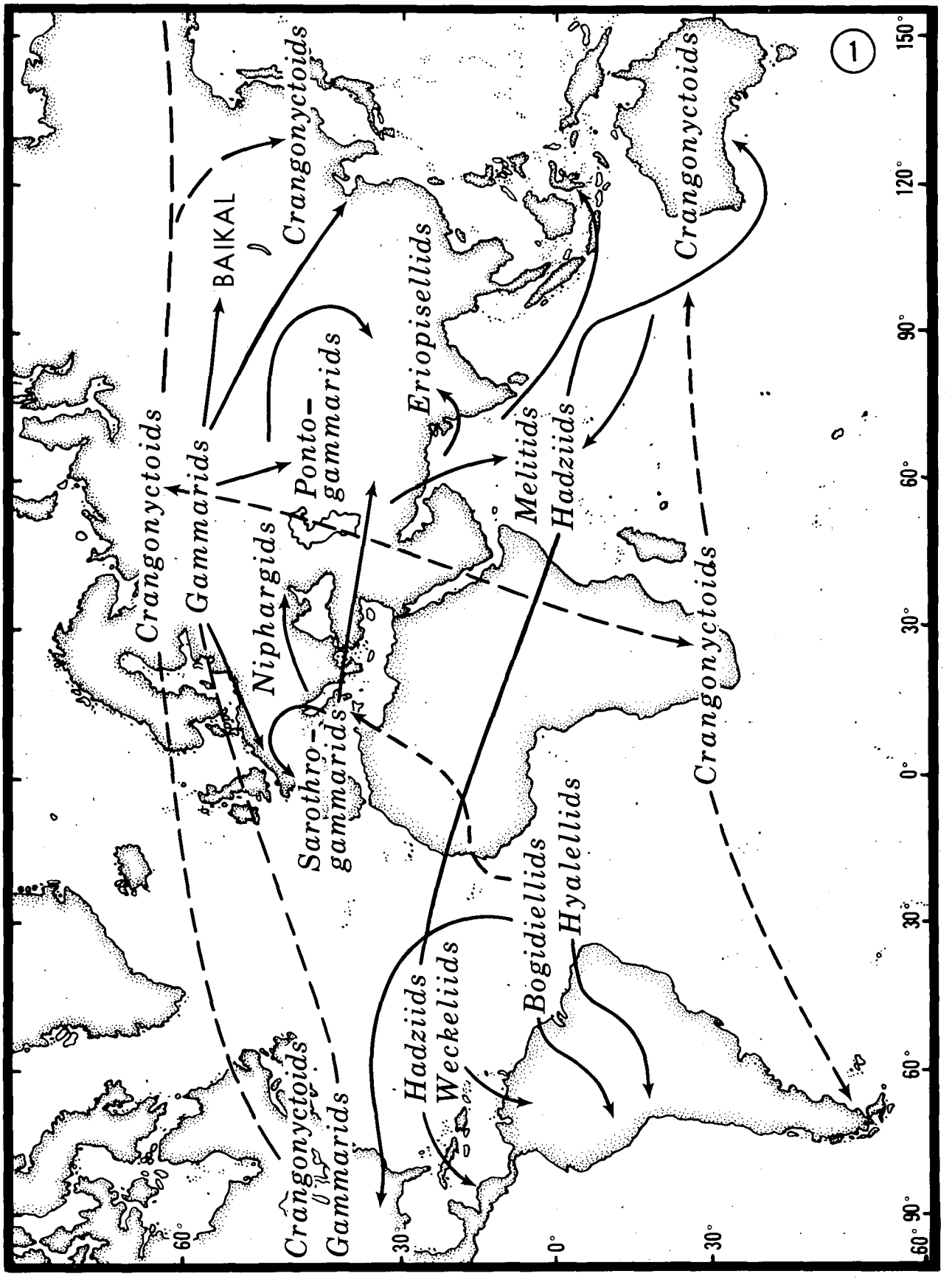
Lower case letters on figures as follows: b, brood plate; c, coxa; d, dorsal; e, broken; f, accessory flagellum; g, gnathopod; h, Hertzog's organ; i, inner; k [various appellations]; l, pereopod; m, mandible; n, dactyl; o, outer; p, pleopod; q, calceolus (i); r, uropod; s, maxilliped; t, telson; u, prebuccal anterior; v, sternal gill; w, coxal gill; x, maxilla; y, epimeron (a).



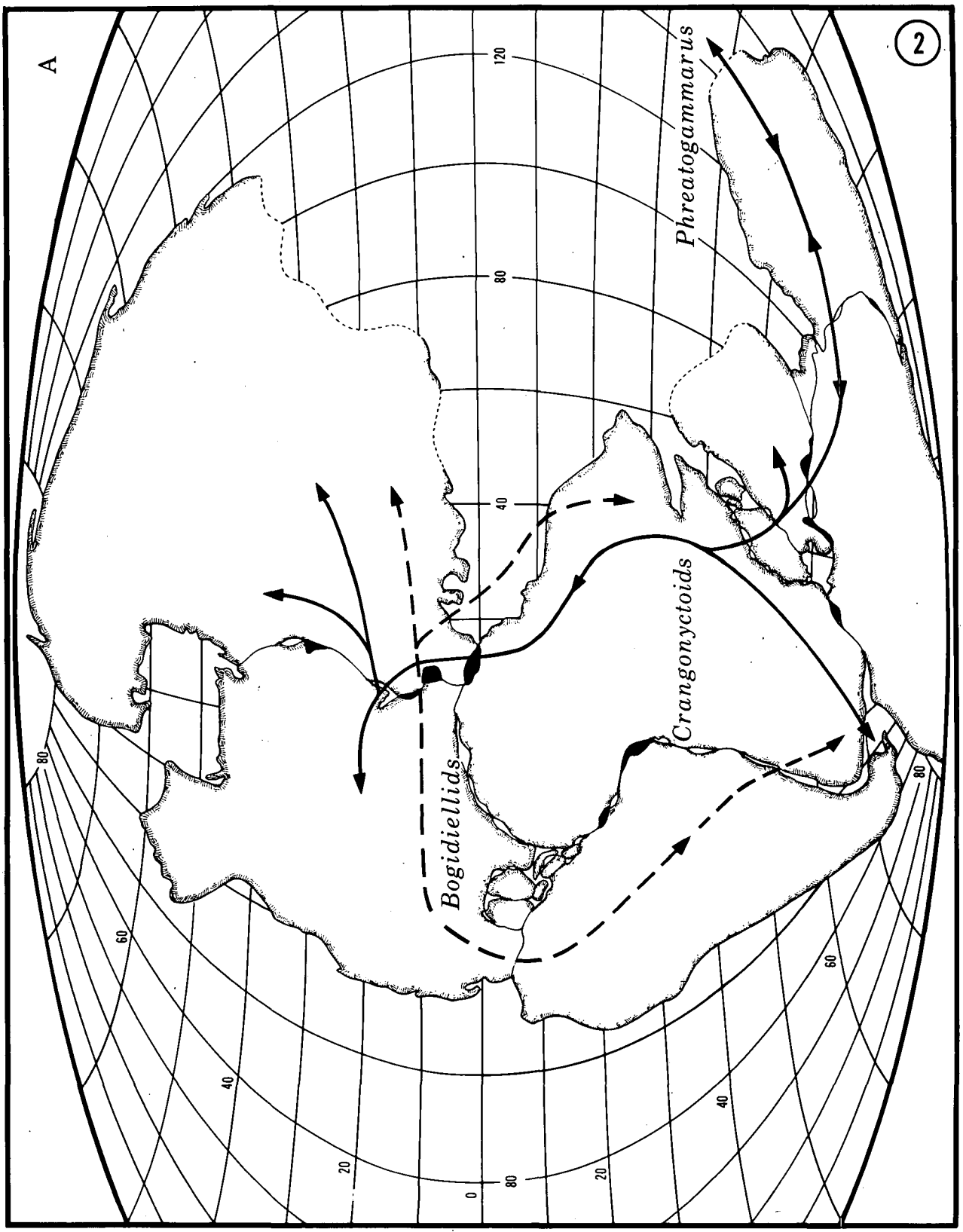
Graph 6. Evolutionary patterns of Ceradocus group (upper), Hadzia-Weckelia group (middle) and Melitids-Ceradocids in general (lower).



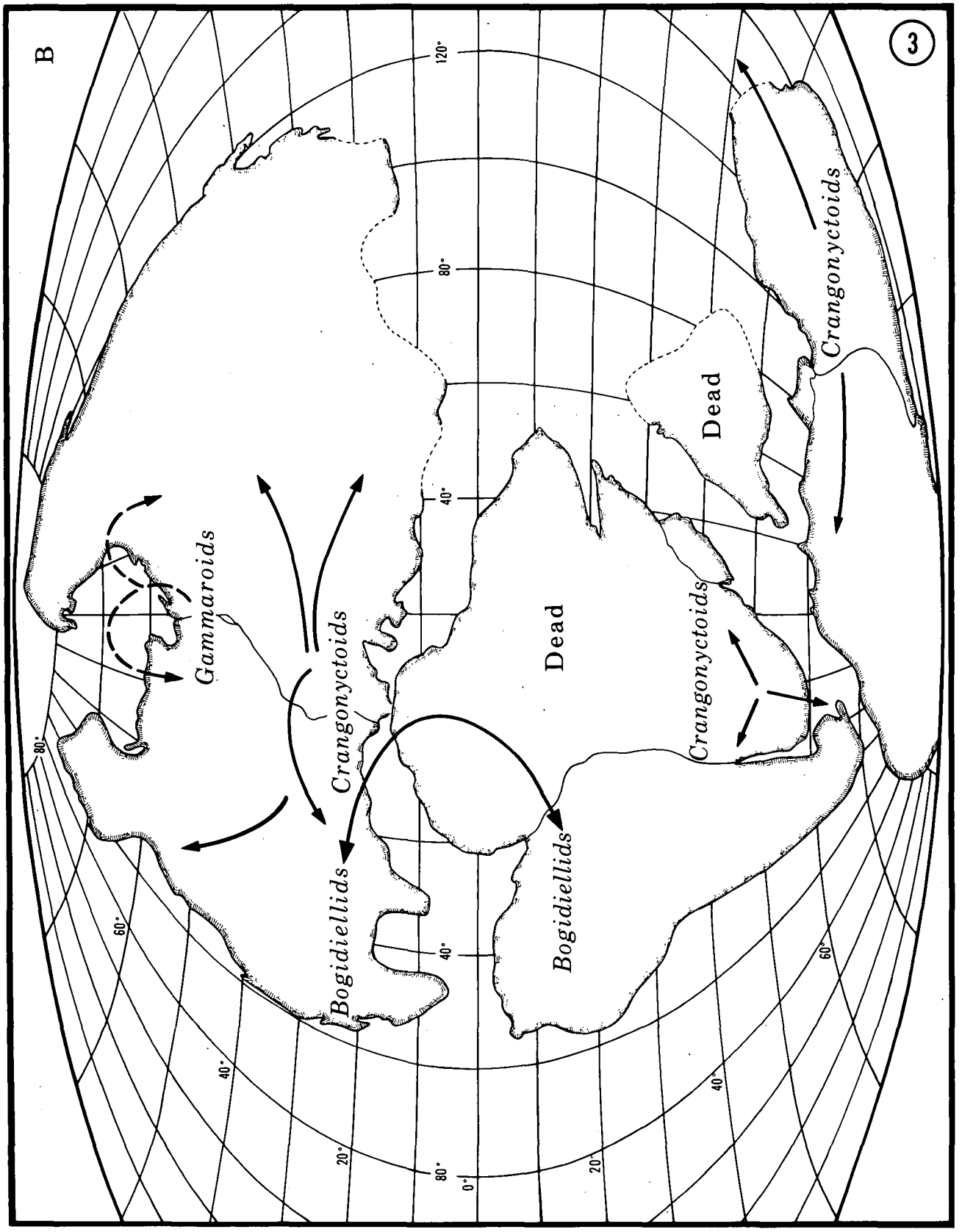
Graph 7. Evolutionary patterns in Melita-group (upper) and Cheirocratus-group (lower).



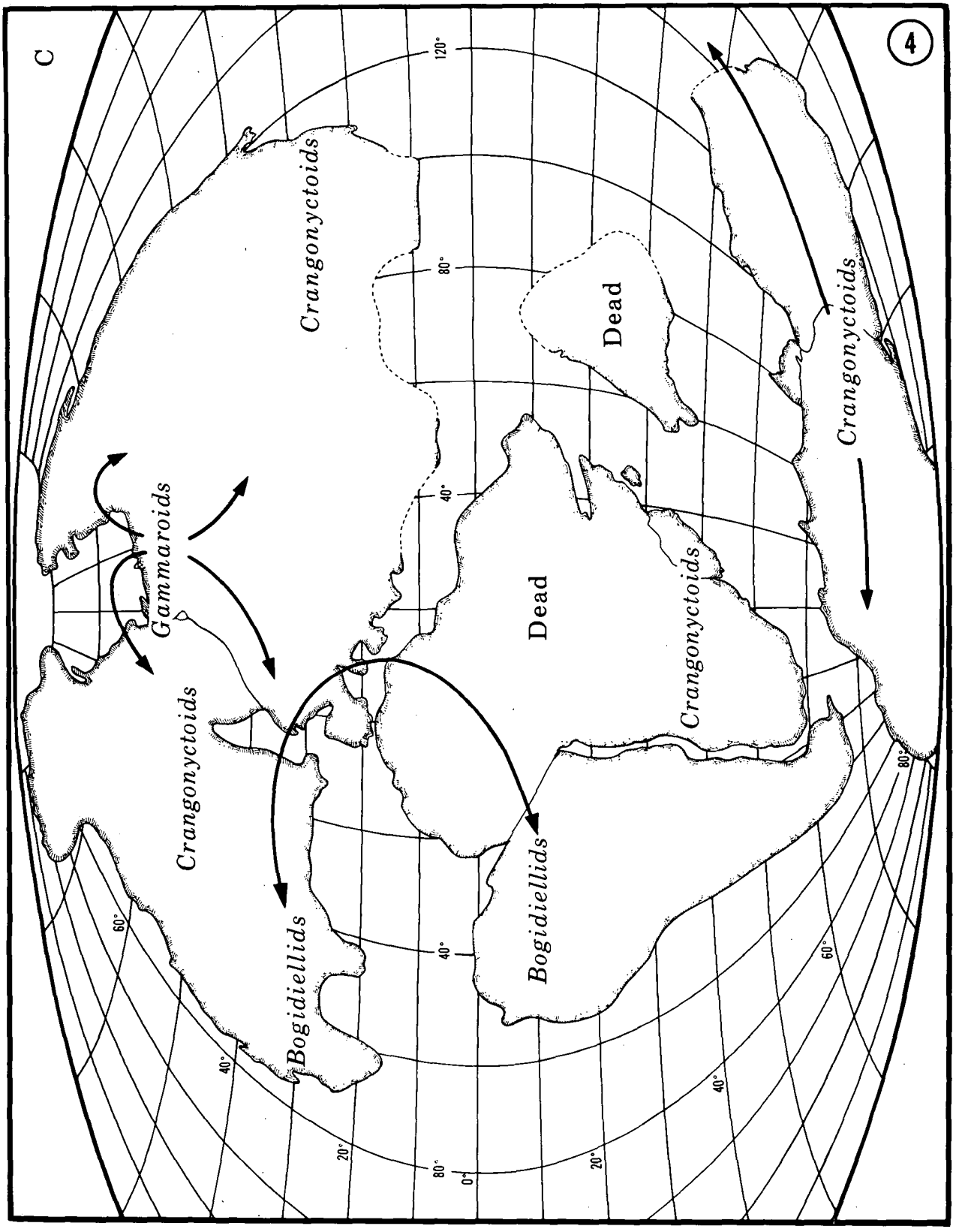
Map 1. Modern distribution of some major freshwater amphipod groups. Dashed lines show connections from tectonic dispersal.



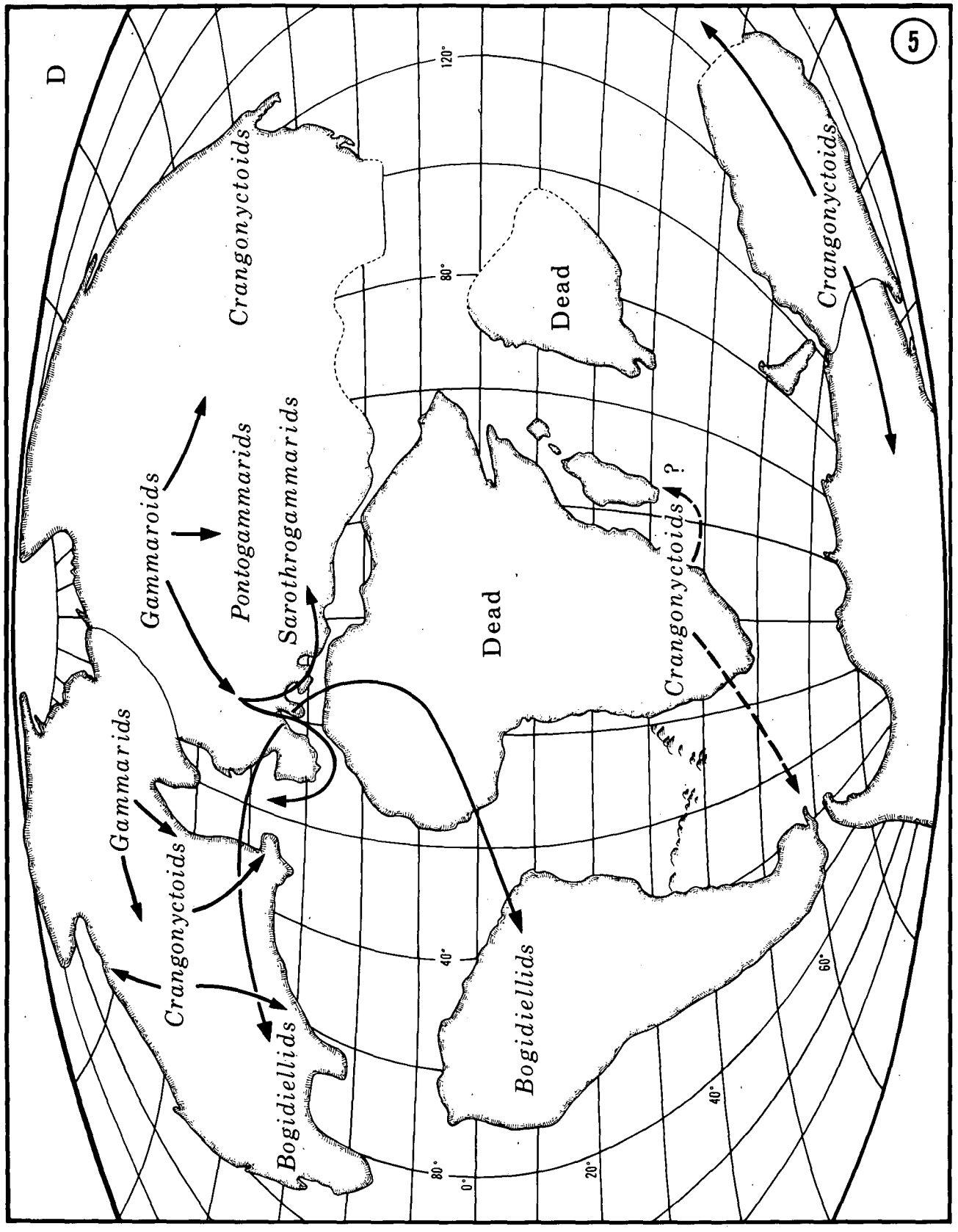
Map 2. Stage 1 amphipod distribution in Pangaea.



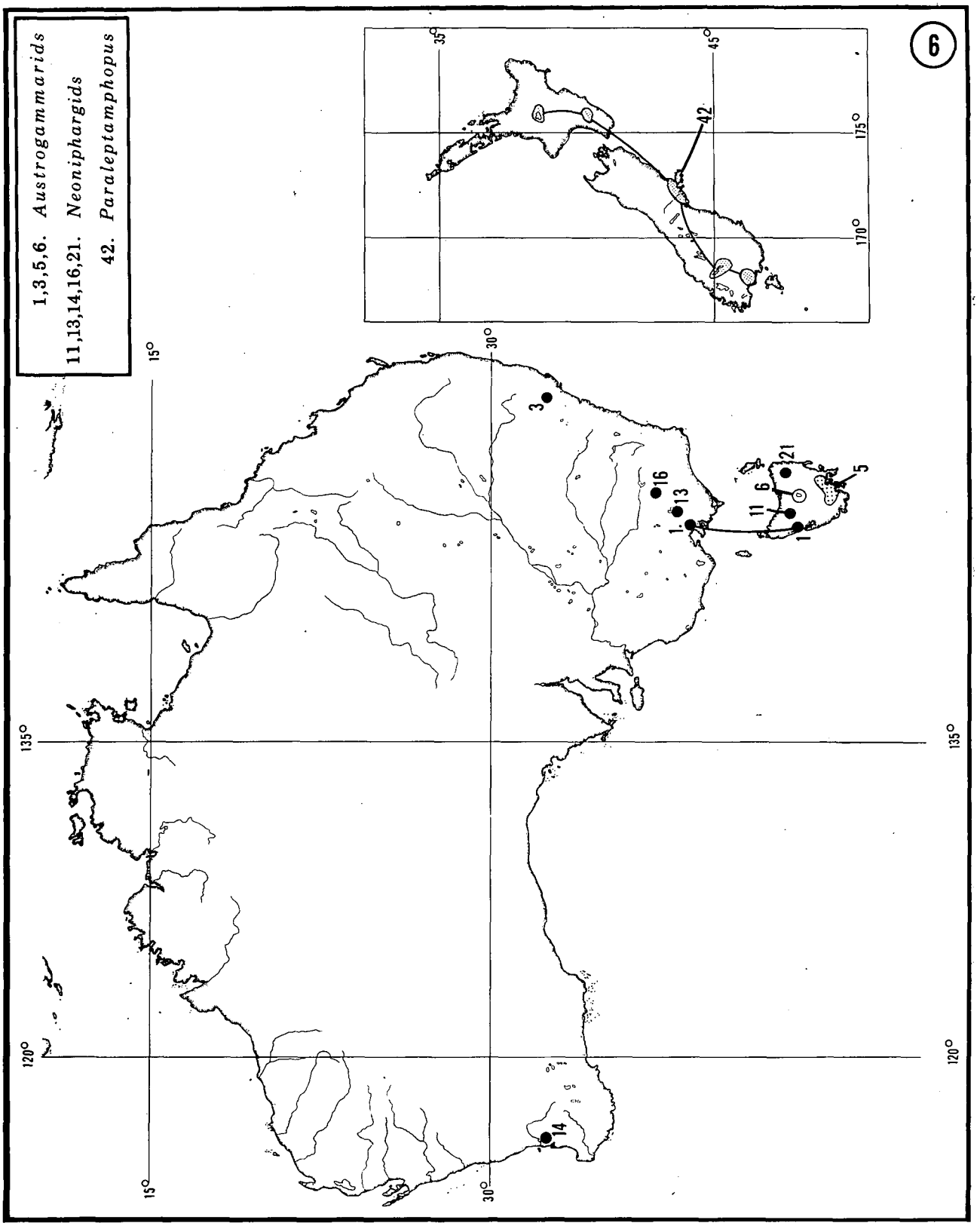
Map 3. Stage 2 amphipod distribution in Pangaea.



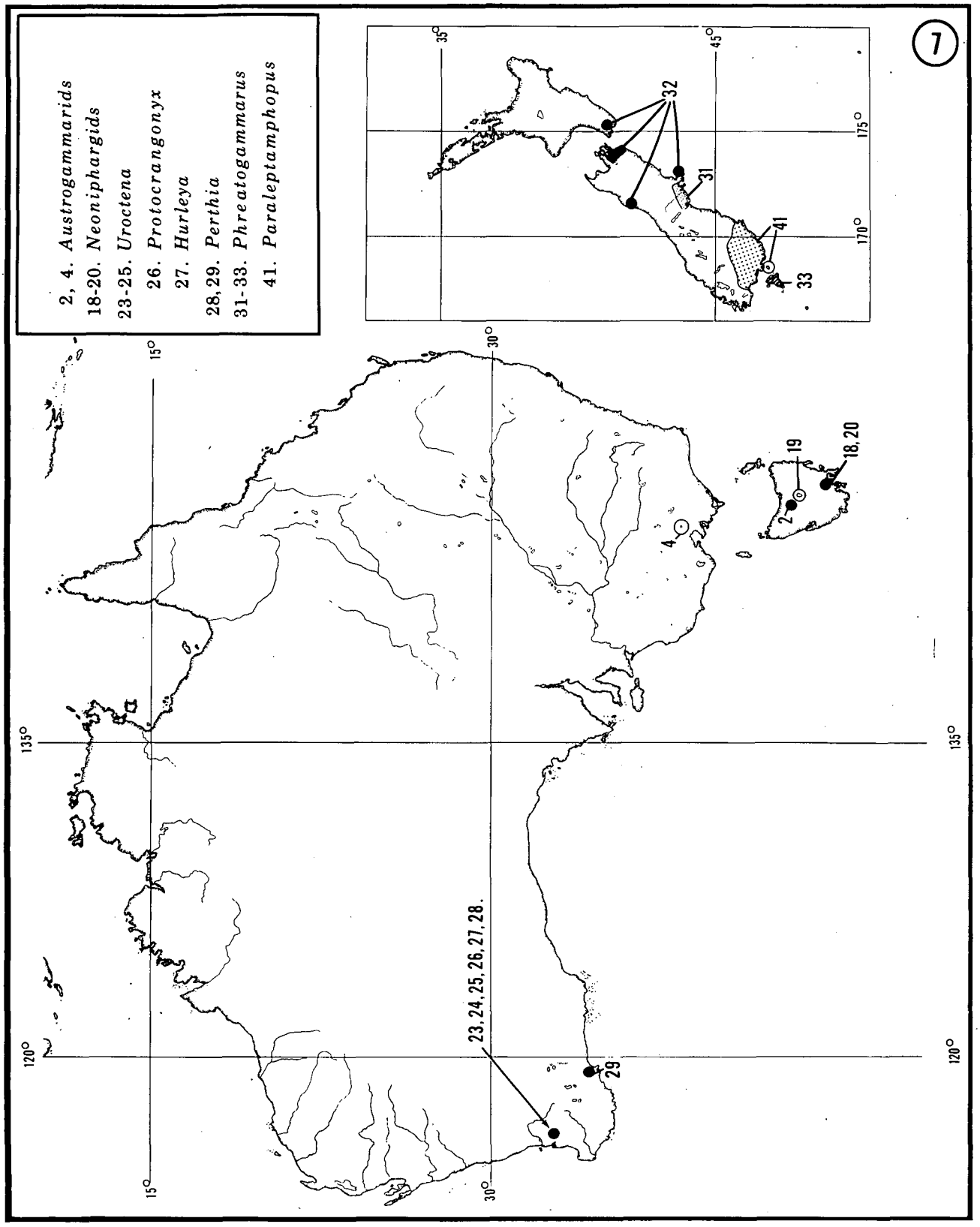
Map 4. Stage 3 amphipod distribution in Pangaea.



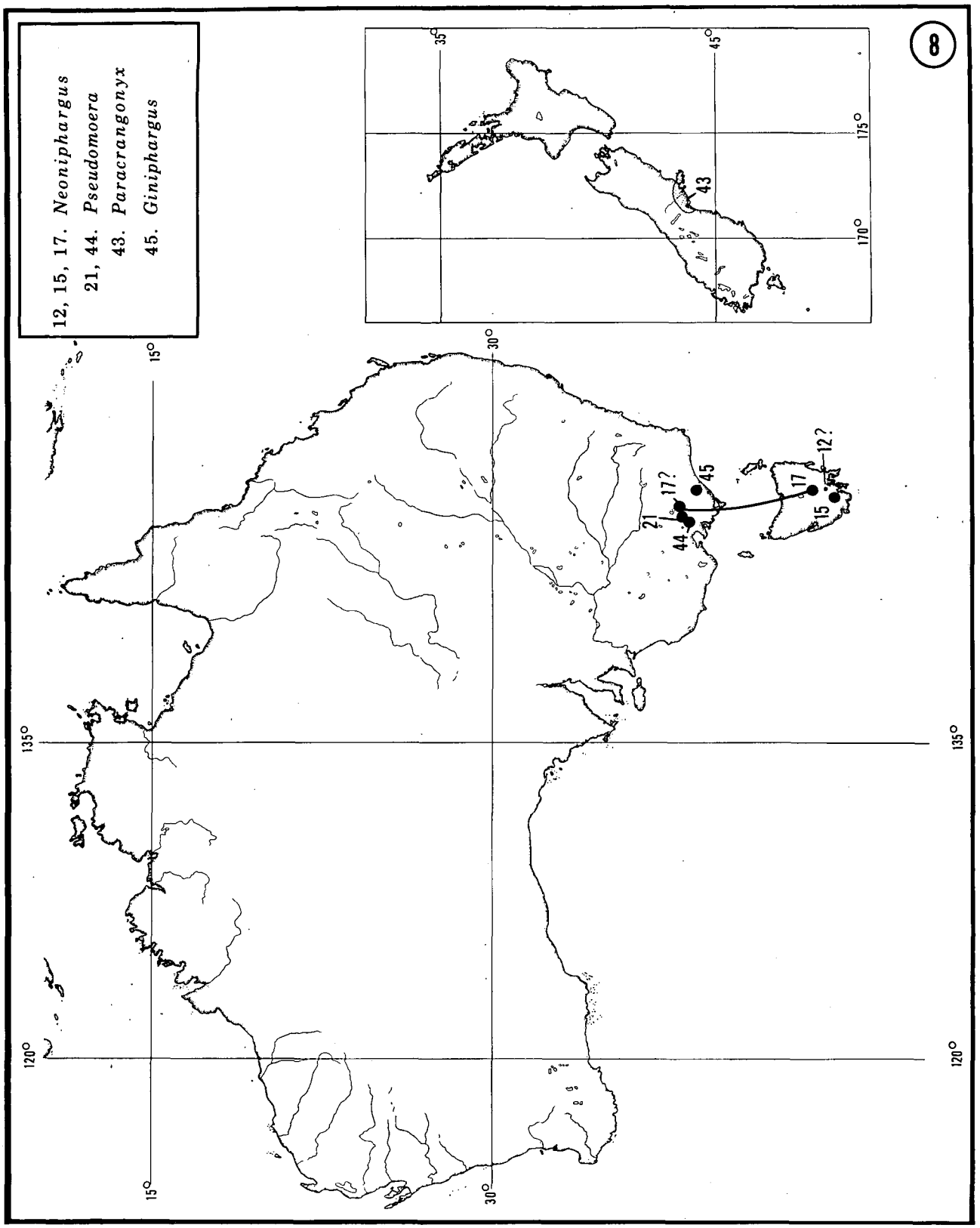
Map 5. Stage 4 amphipod distribution in post-Pangaea.



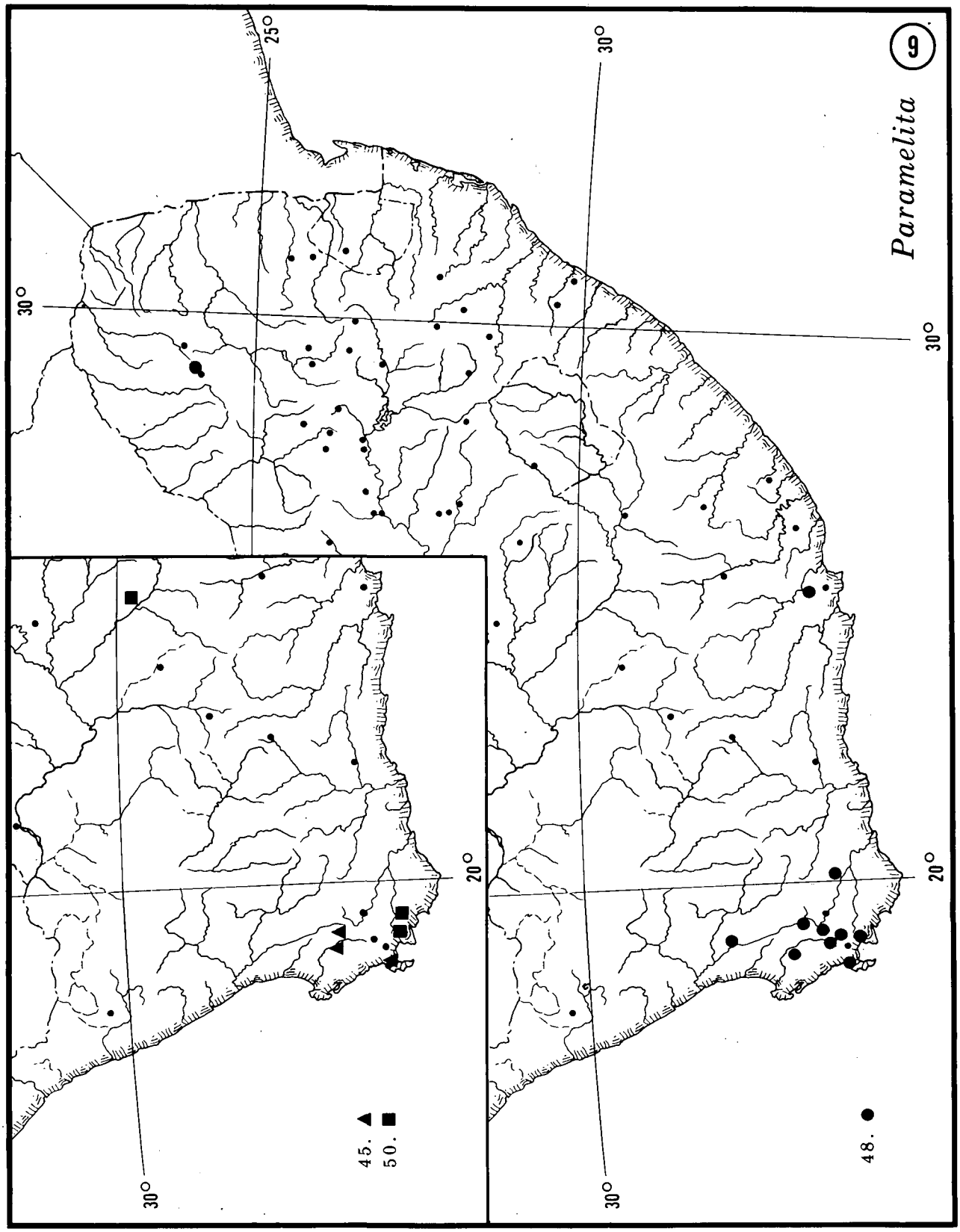
Map 6. Distribution of Crangonyctoid groups in Australasia. See text for species numbers.



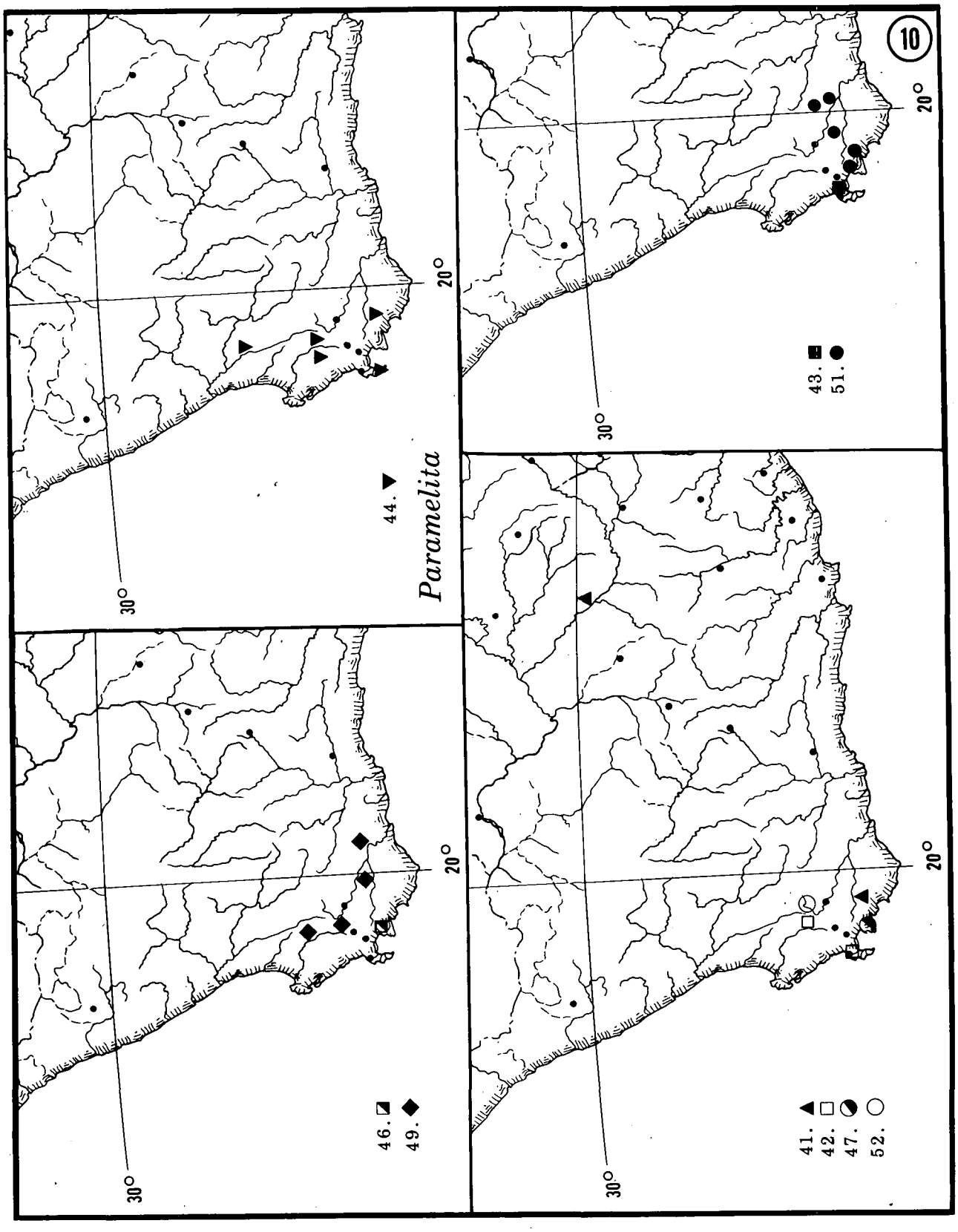
Map 7. Distribution of Crangonyctoid groups in Australasia. See text for species numbers.



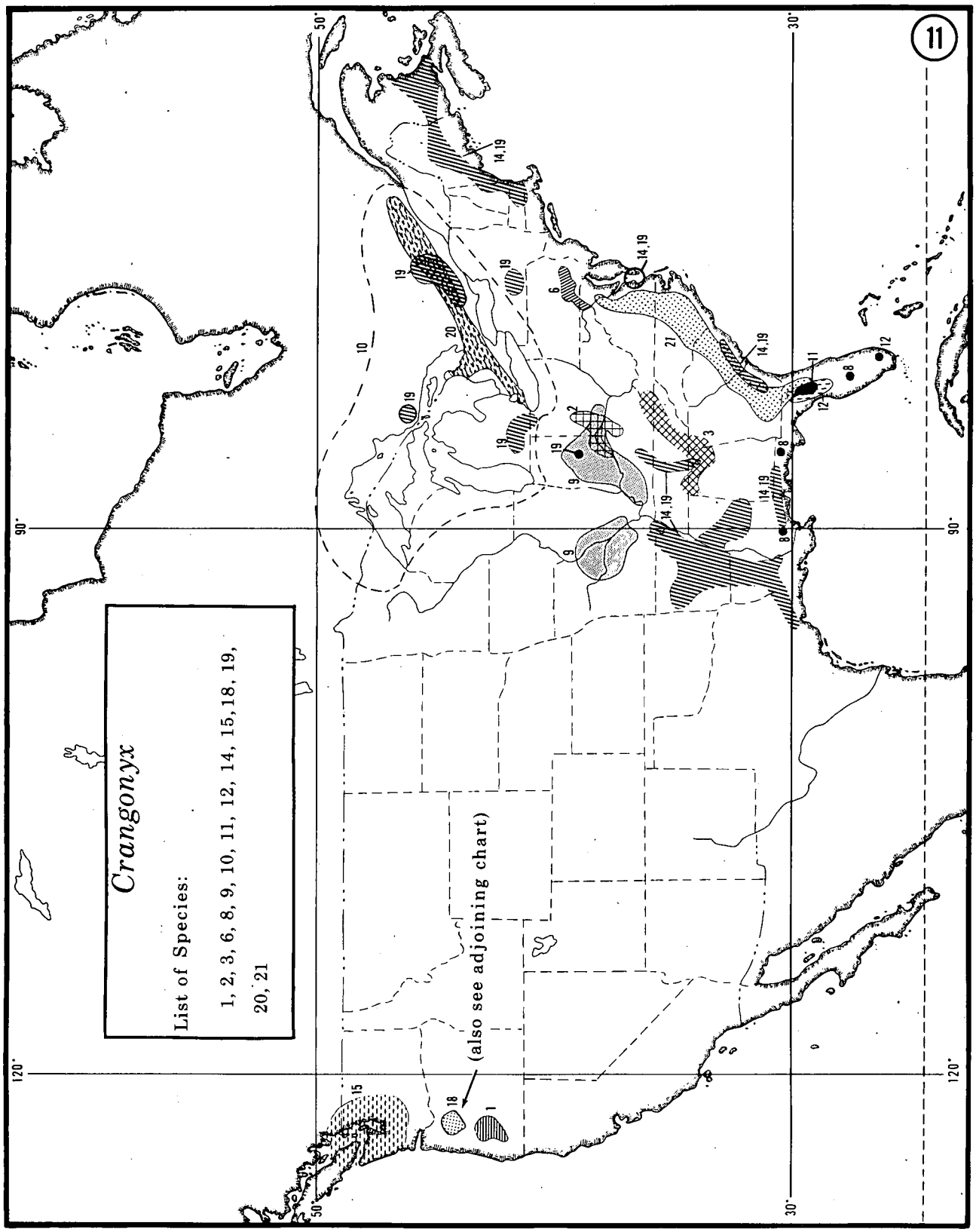
Map 8. Distribution of Crangonyctoid groups in Australasia. See text for species numbers.



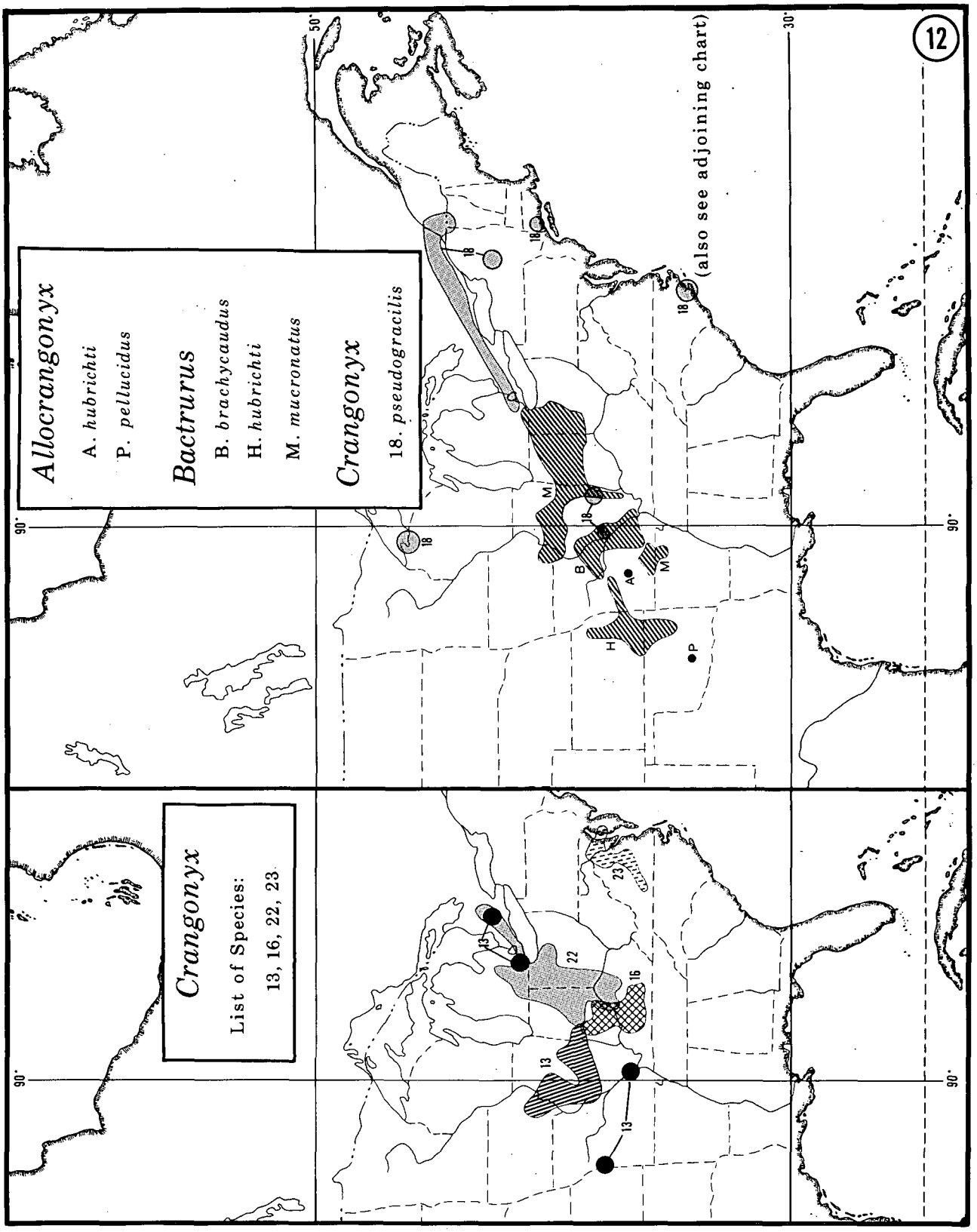
Map 9. Distribution of Paramelita in South Africa. See text for species numbers. Smallest dots are population centers.



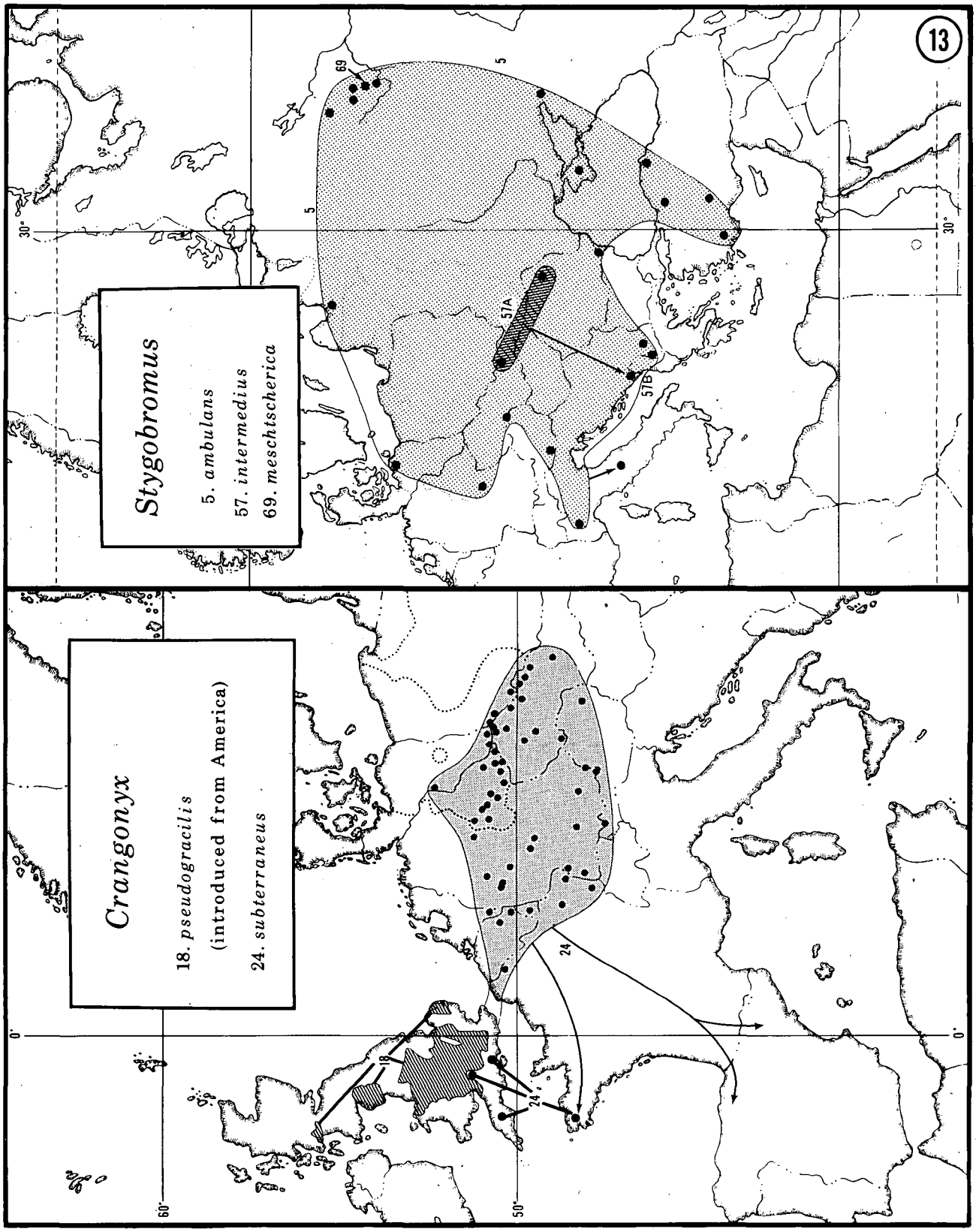
Map 10. Distribution of Paramelita in South Africa. See text for species numbers. Smallest dots are population centers.



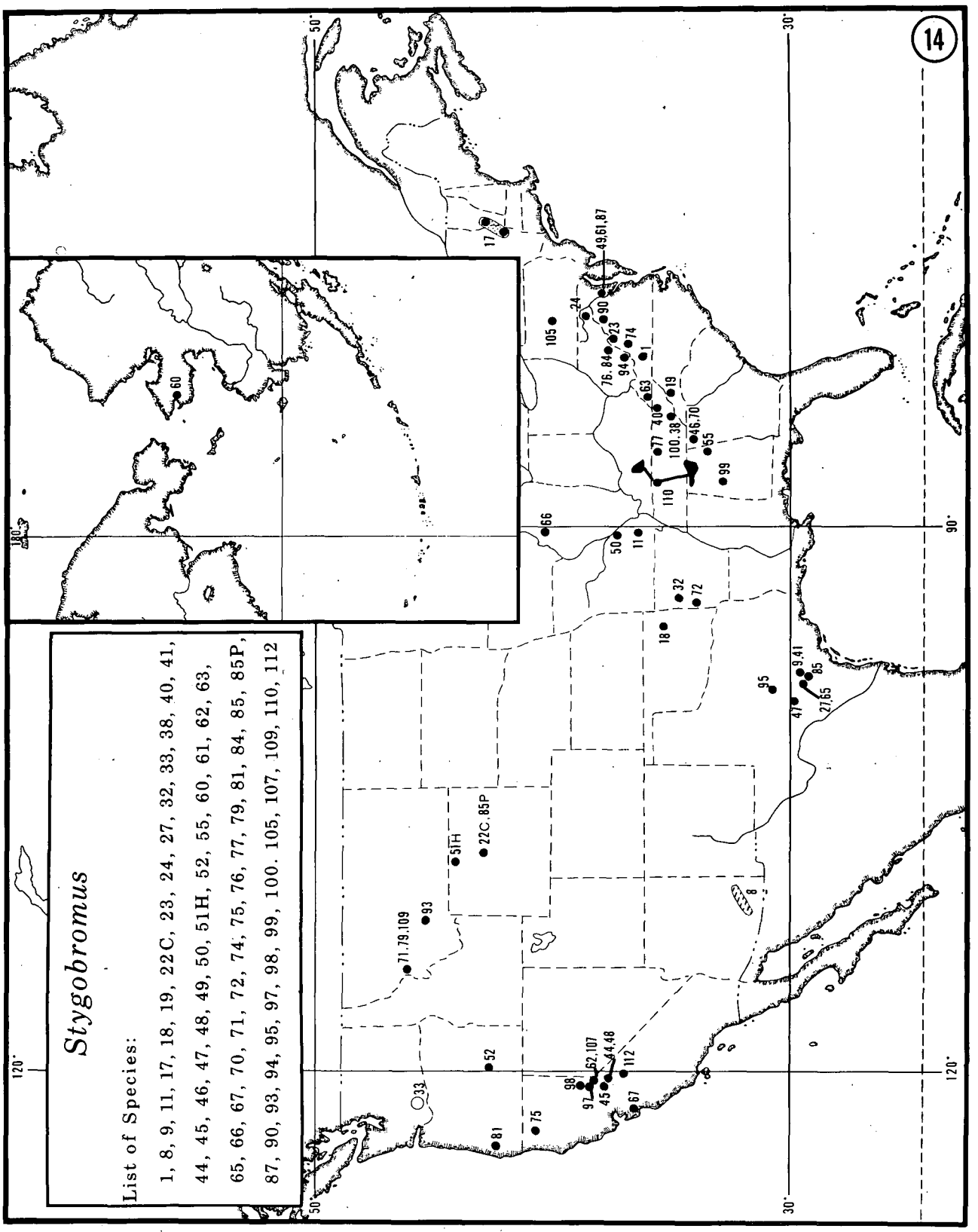
Map 11. Distribution of Crangonyx in North America. See text for species numbers.



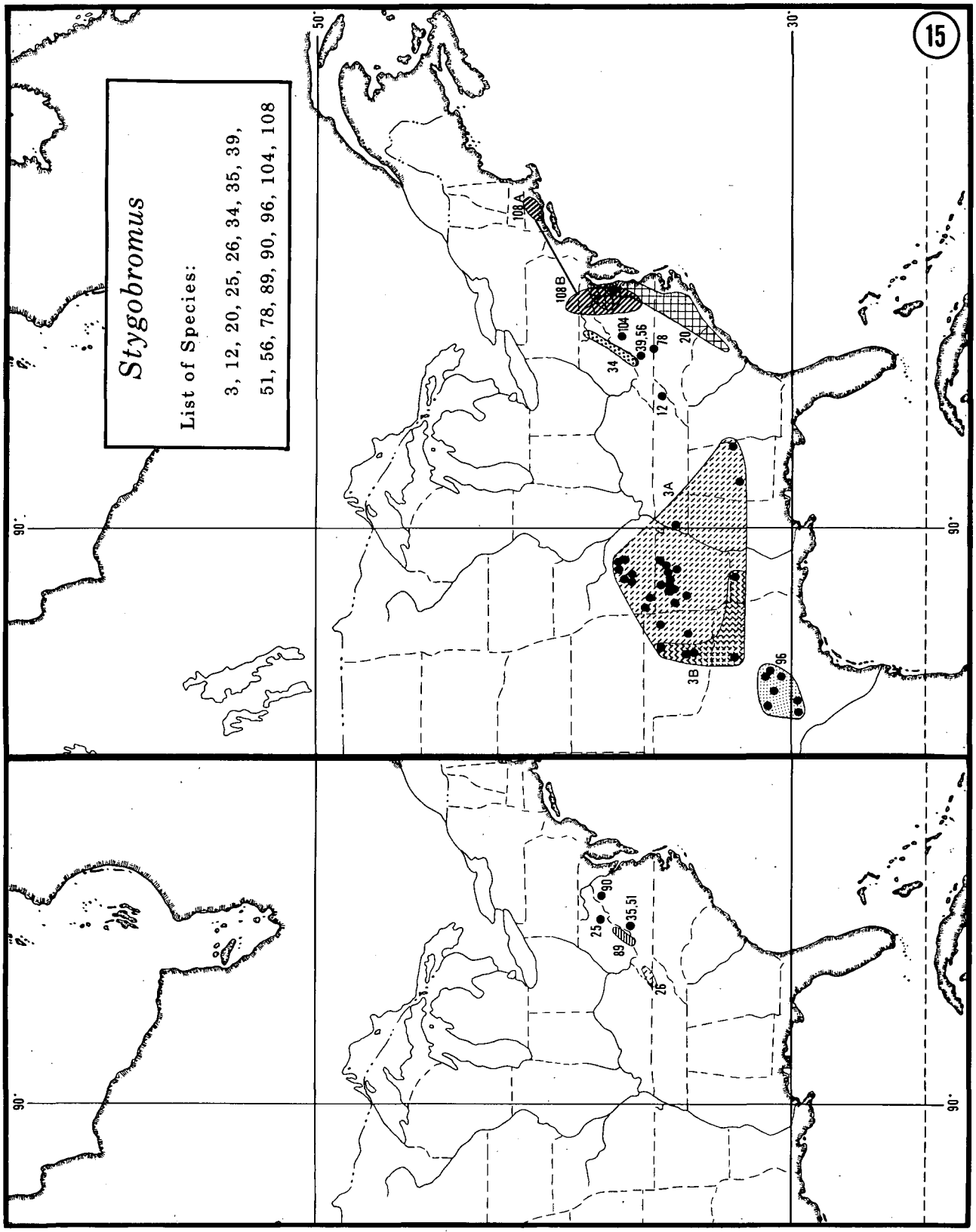
Map 12. Distribution of Crangonyctid groups in North America. See text for species numbers.



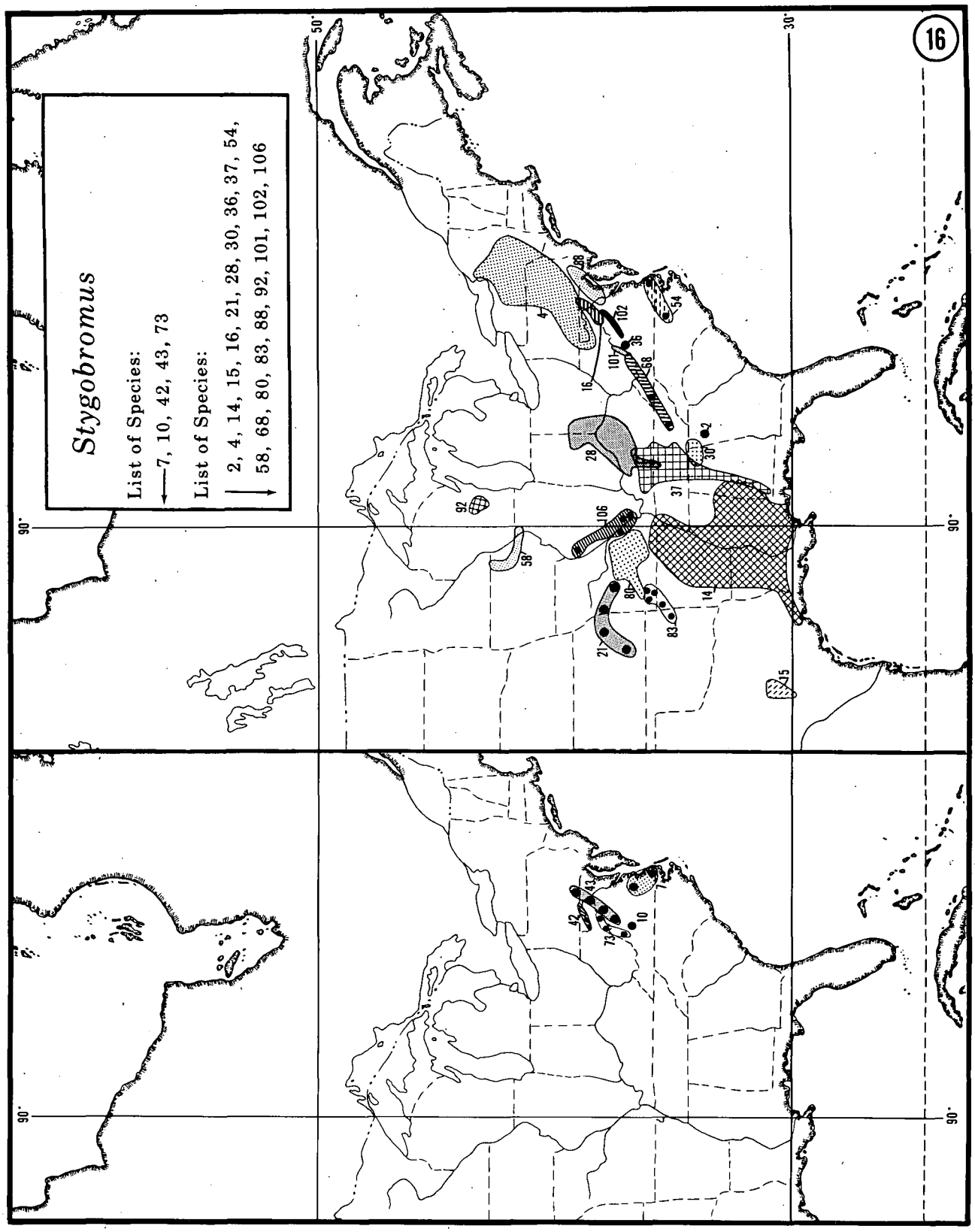
Map 13. Distribution of Crangonyctid groups in Europe. See text for species numbers.



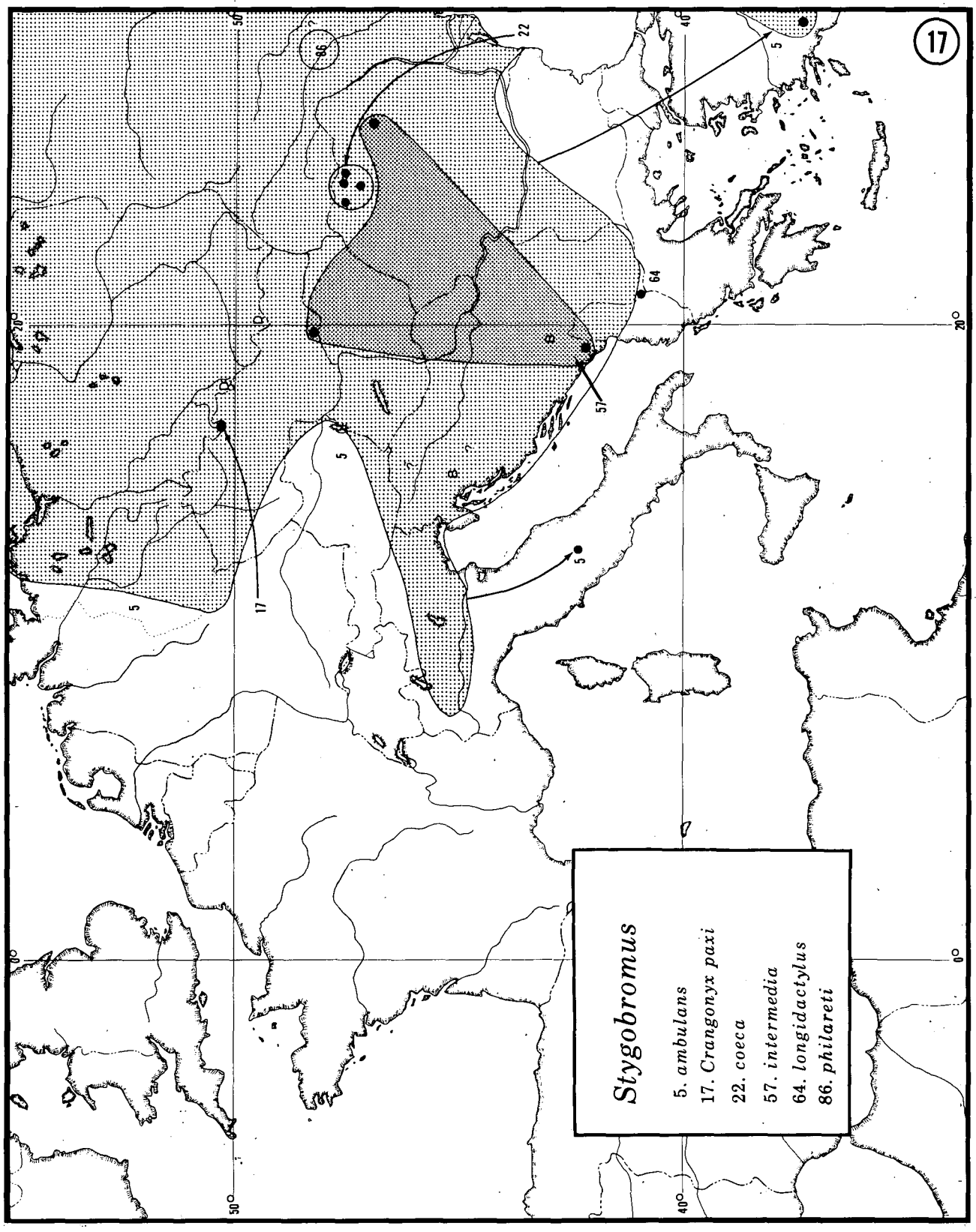
Map 14. Distribution of Stygobromus in North America. See text for species numbers.



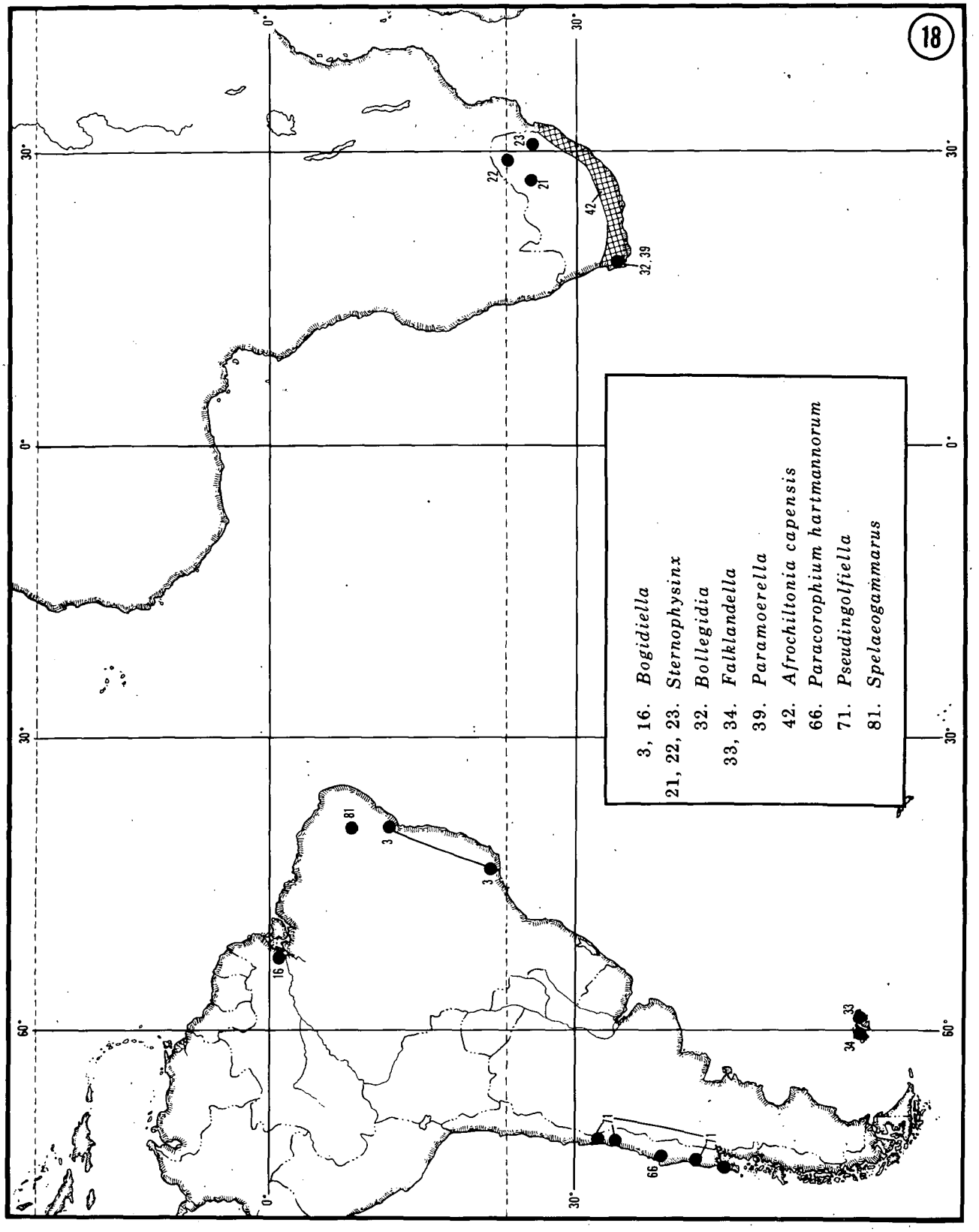
Map 15. Distribution of Stygobromus in North America. See text for species numbers.



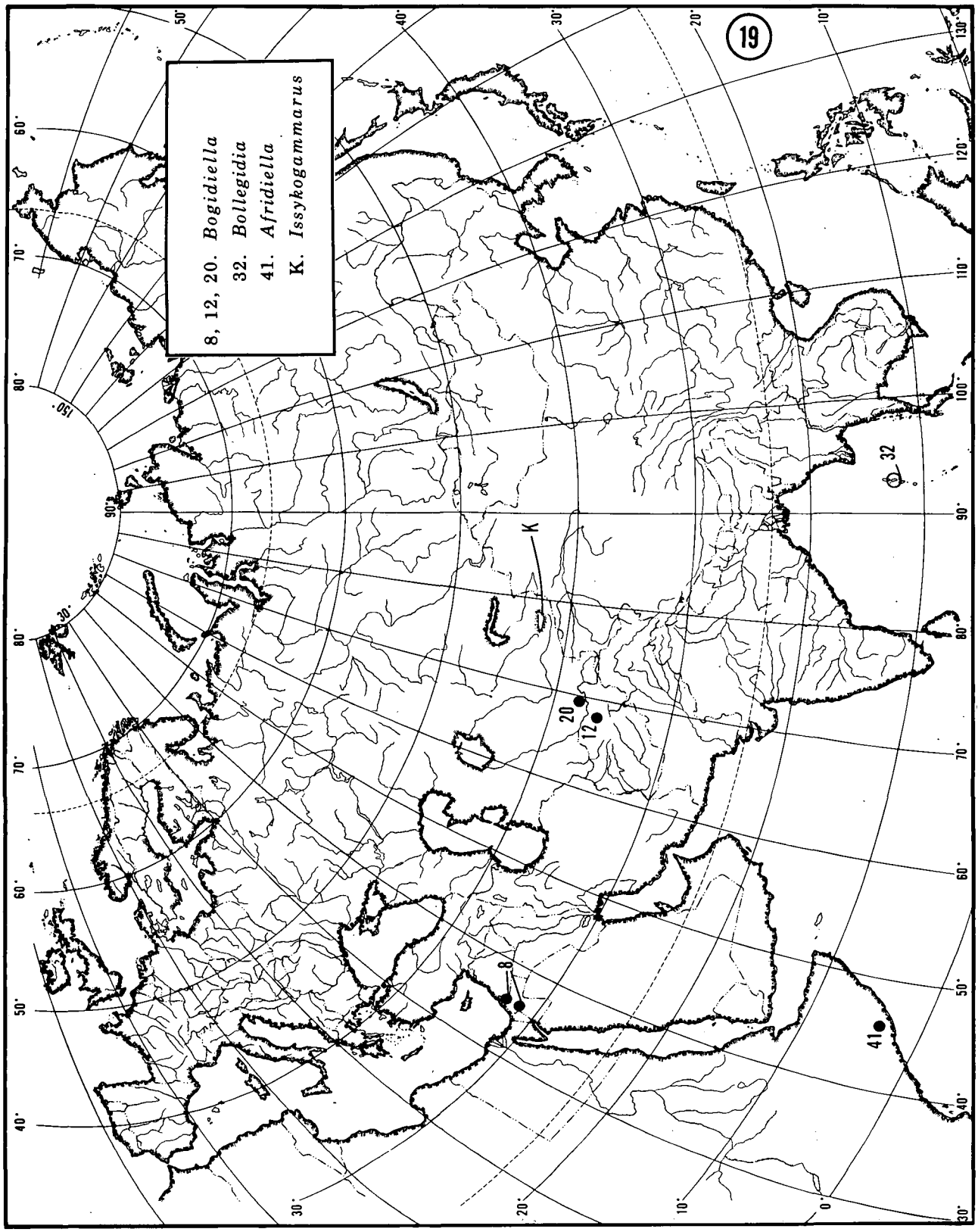
Map 16. Distribution of <u>Stygobromus</u> in North America. See text for species numbers.



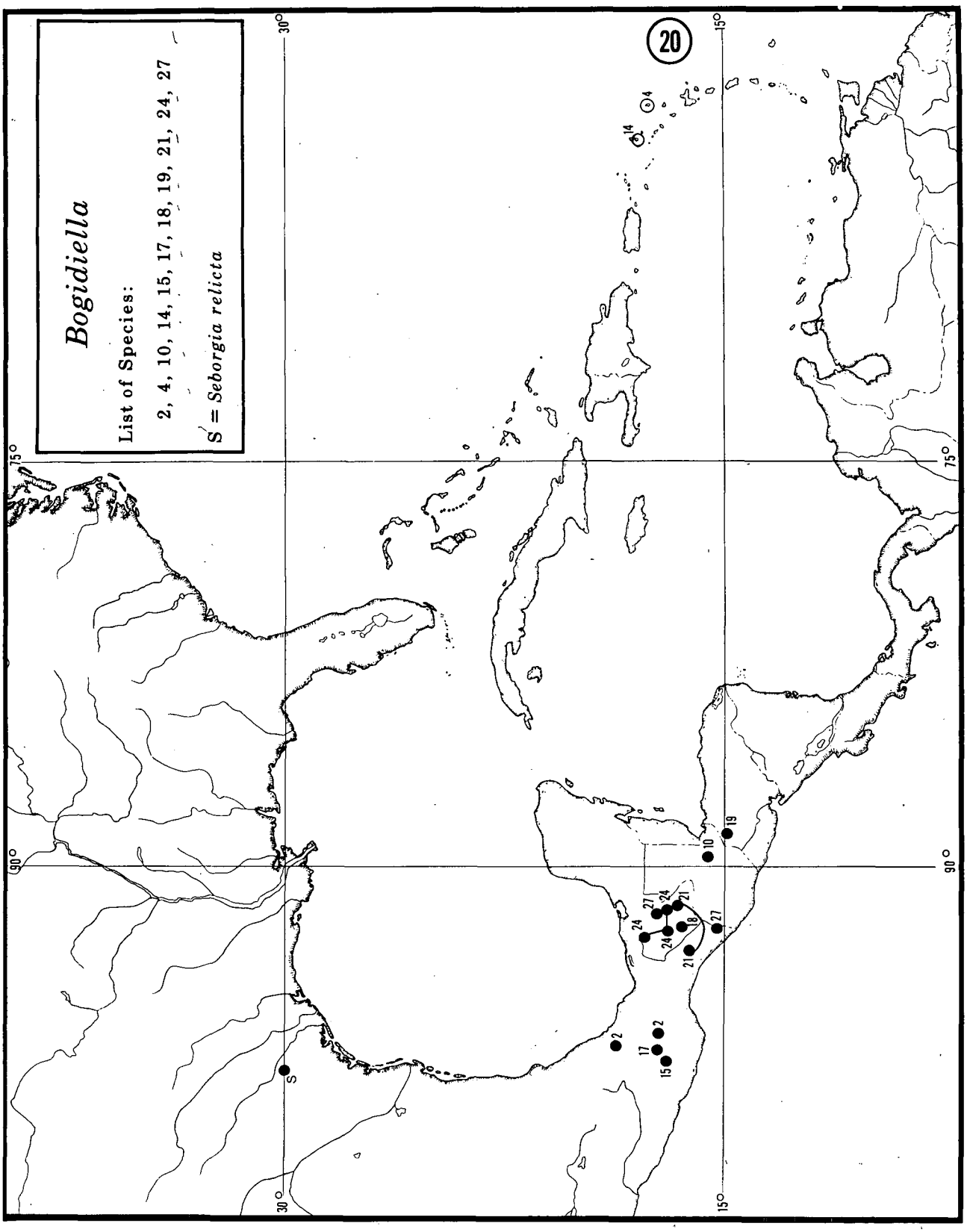
Map 17. Distribution of Stygobromus in Europe. See text for species numbers.



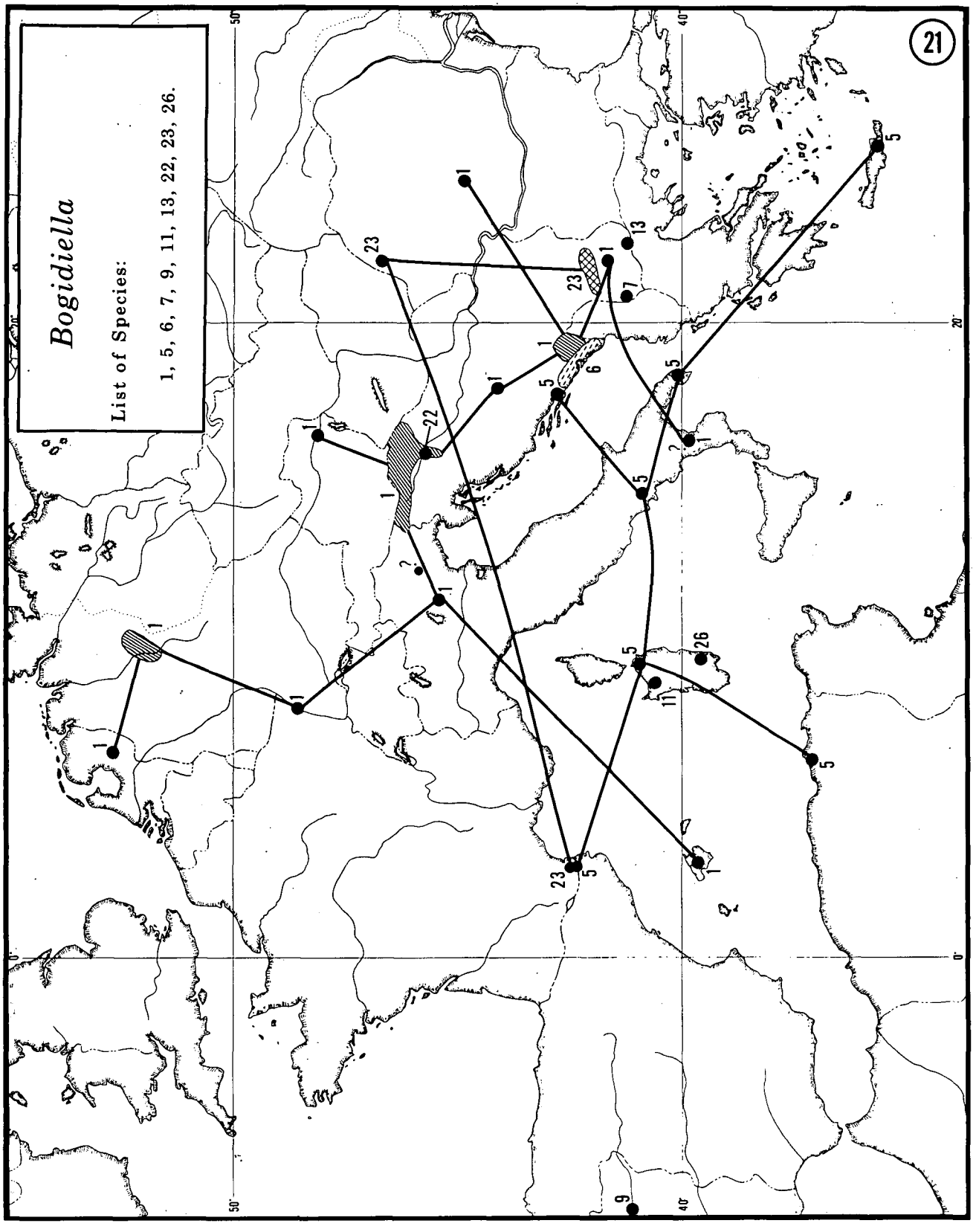
Map 18. Distribution of various taxa in Neotropica and South Africa. See text for species numbers.



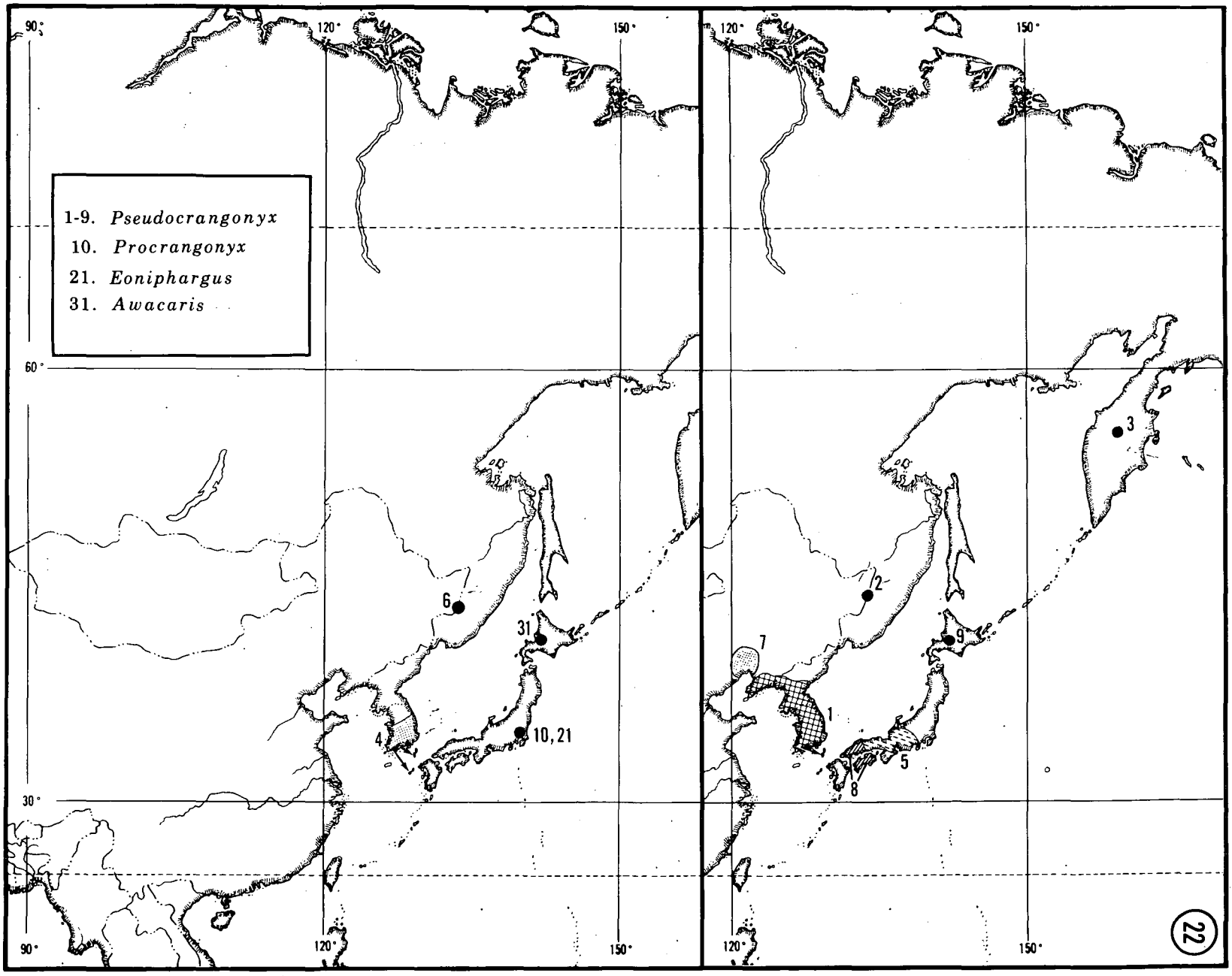
Map 19. Distribution of various taxa in Asia. See text for species numbers.



Map 20. Distribution of Bogidiella and Seborgia in America. See text for species numbers.

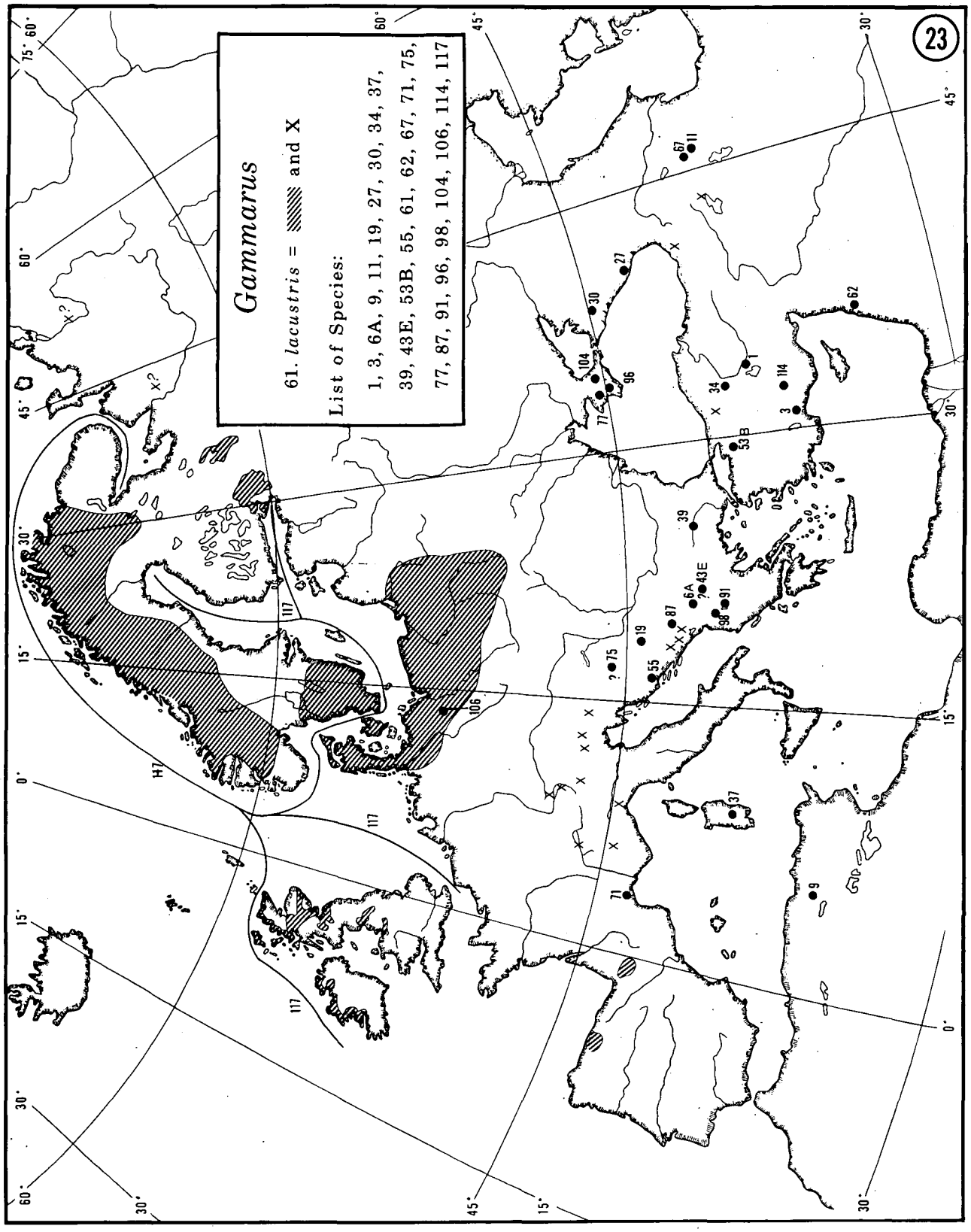


Map 21. Distribution of Bogidiella in Europe. See text for species numbers.

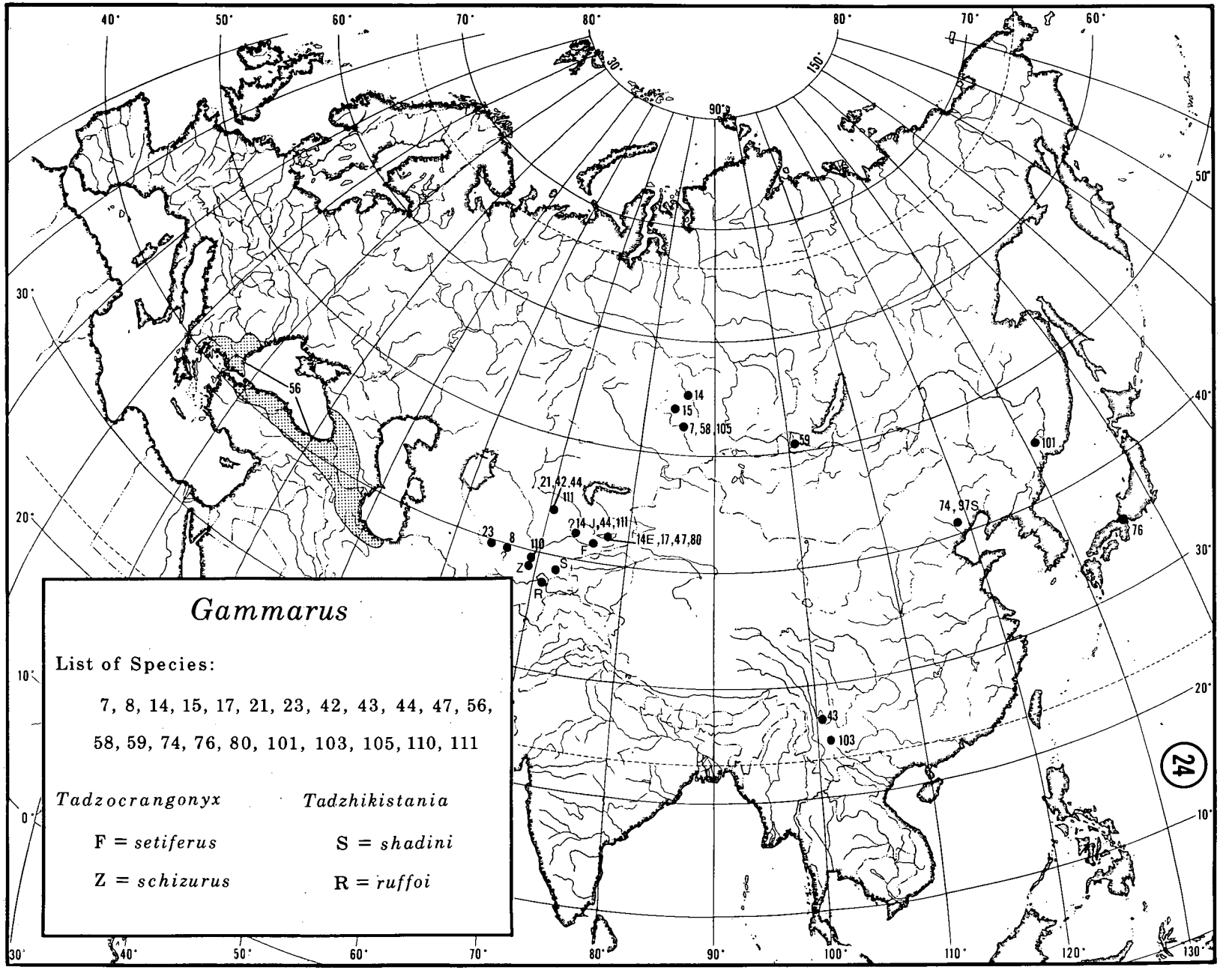


Map 22. Distribution of various taxa in east Asia. See text for species numbers.

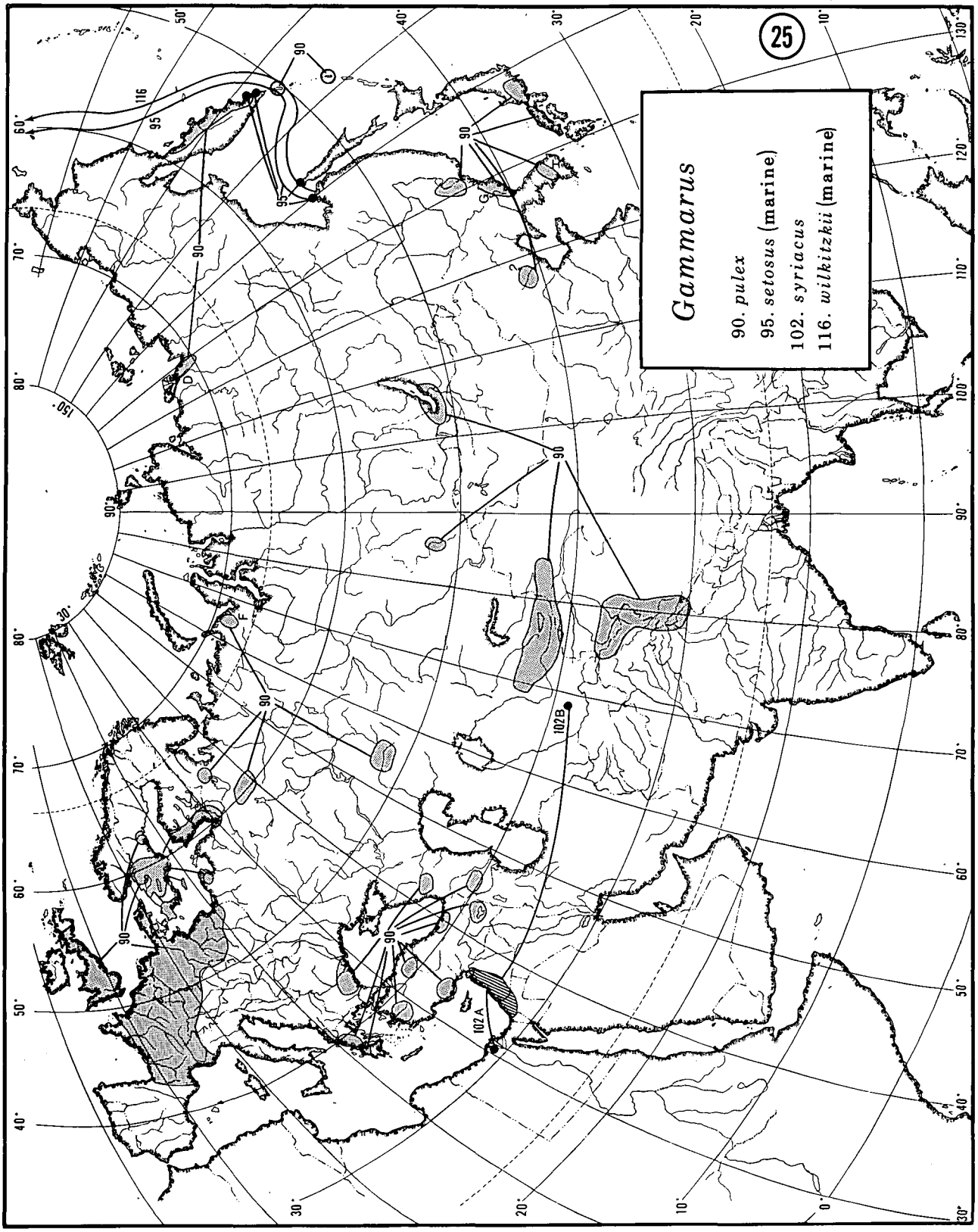
1- P. asiaticus
2- P. bohemicus
3- P. camtschaticus
4- P. coreanus
5- P. kyotoensis
6- P. leruanidemi
7. P. manchuricus
8- P. shikokuensis
9- P. yezoensis



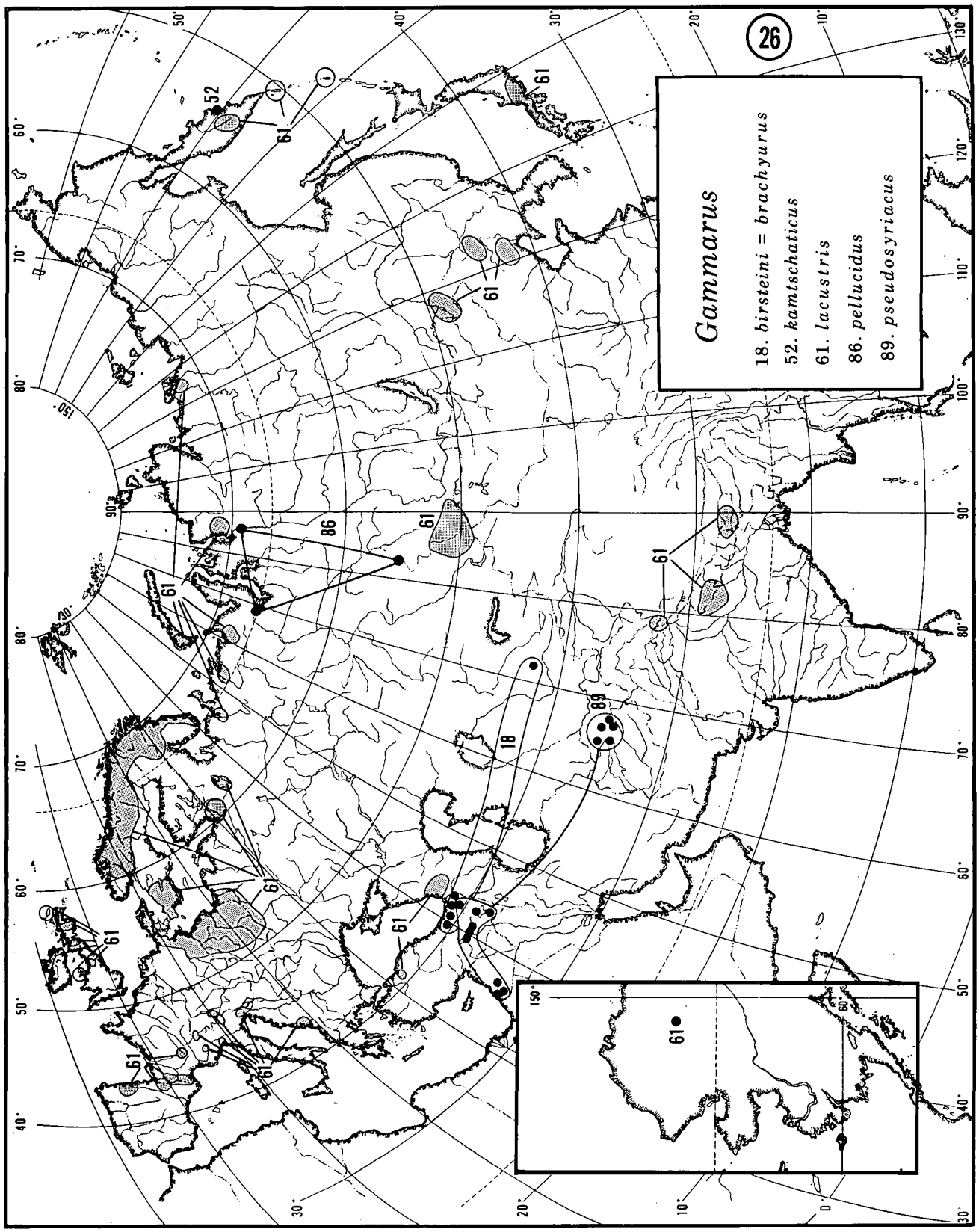
Map 23. Distribution of Gammarus in west Palearctica. See text for species numbers. Major species = lacustris; 61 others mostly known from single localities.



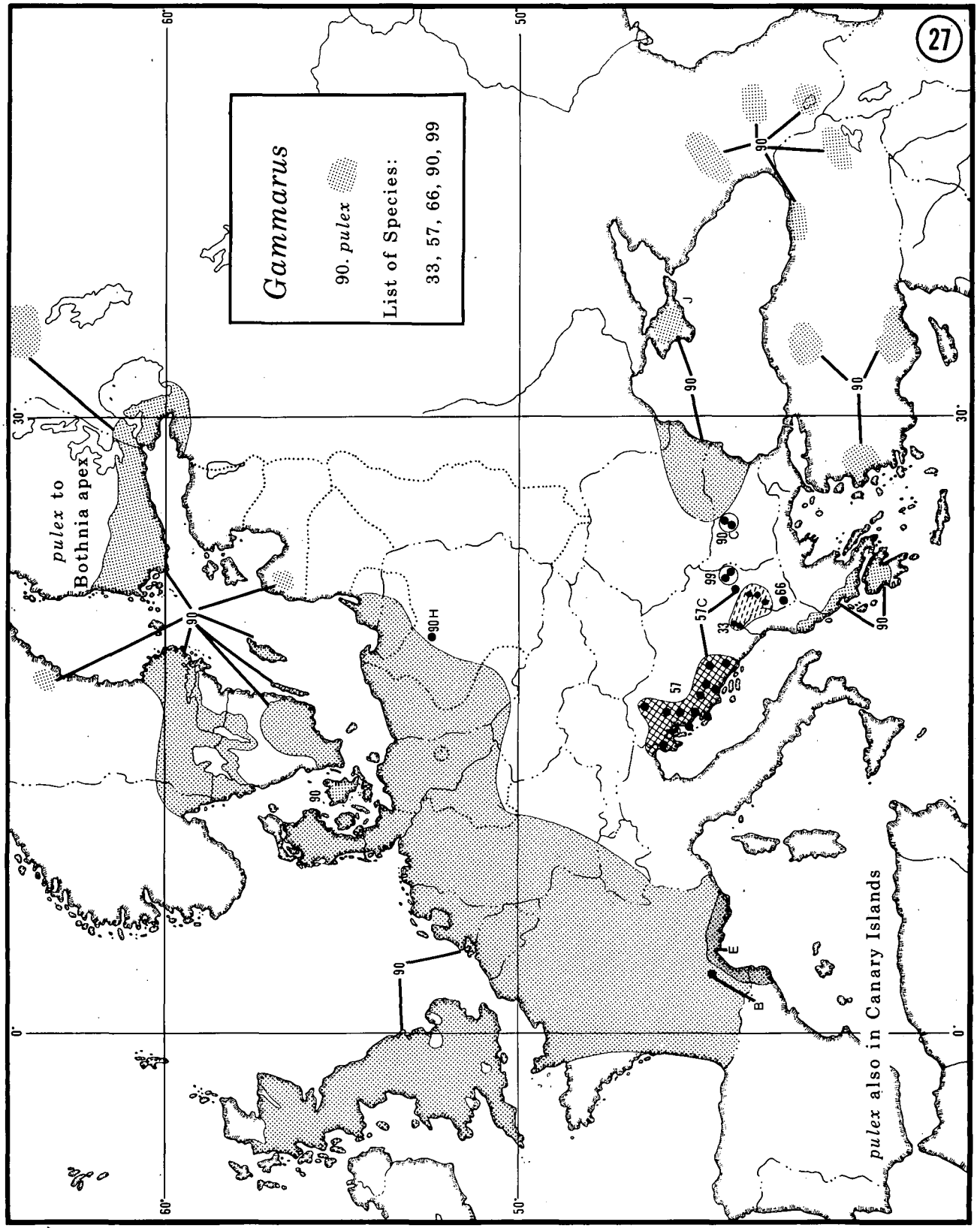
Map 24. Distribution of Gammarids in Asia. See text for species numbers. Major species = komareki 56.



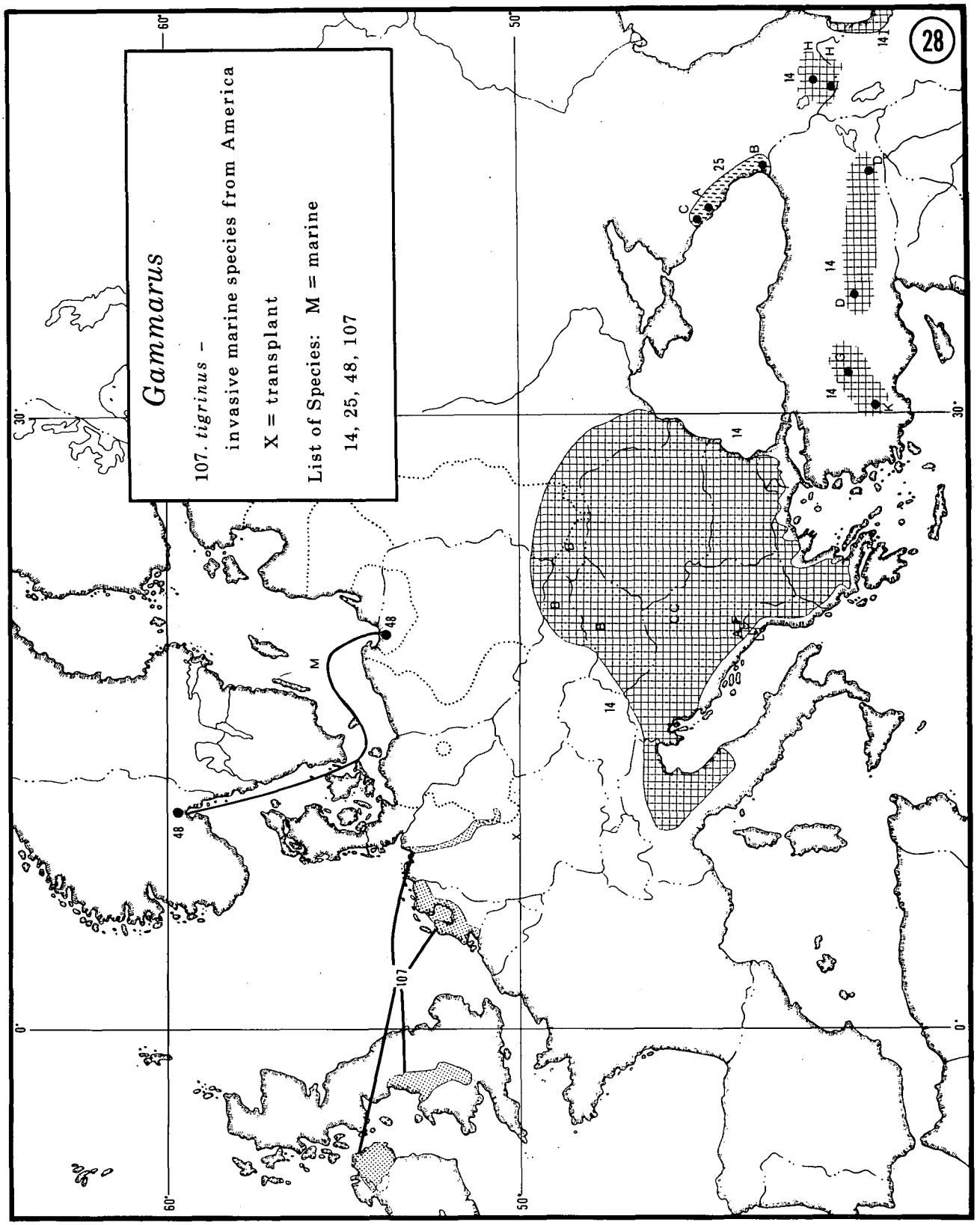
Map 25. Distribution of Gammarus in Asia. See text for species numbers. Major species = pulex 90.



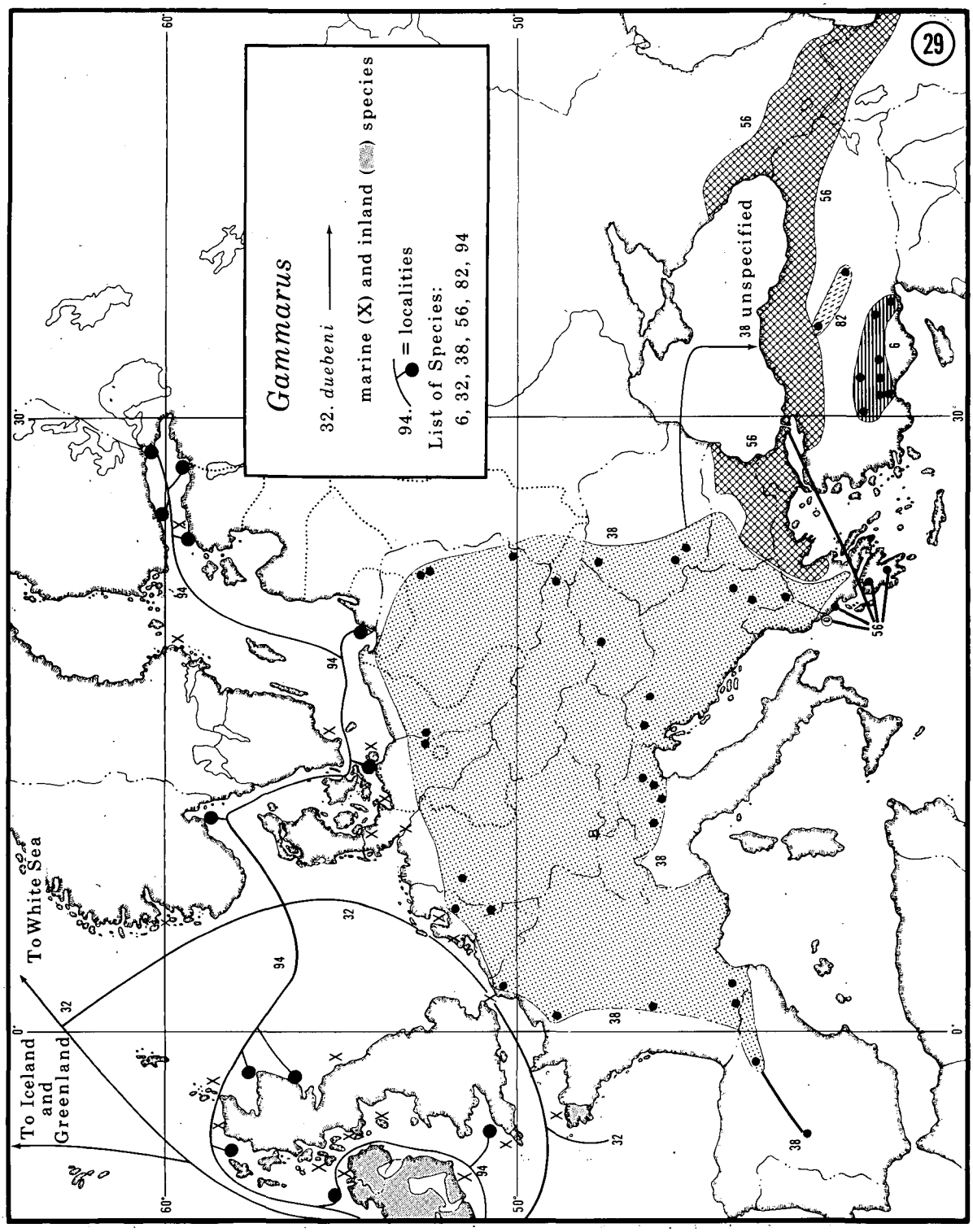
Map 26. Distribution of Gammarus in Eurasia. See text for species numbers. Major species = lacustris 61.



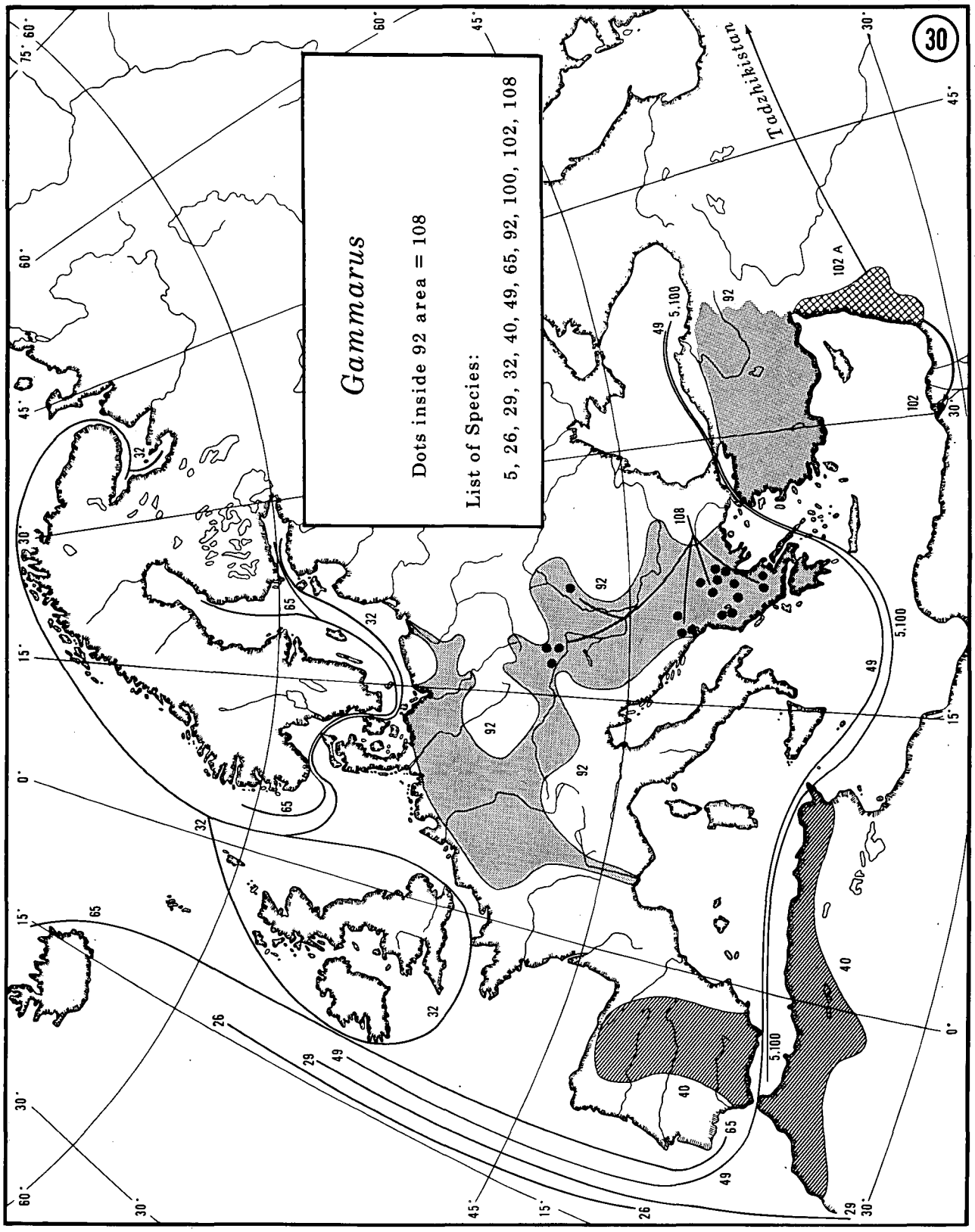
Map 27. Distribution of Gammarus in west Palearctica. See text for species numbers. Major species = pulex 90.



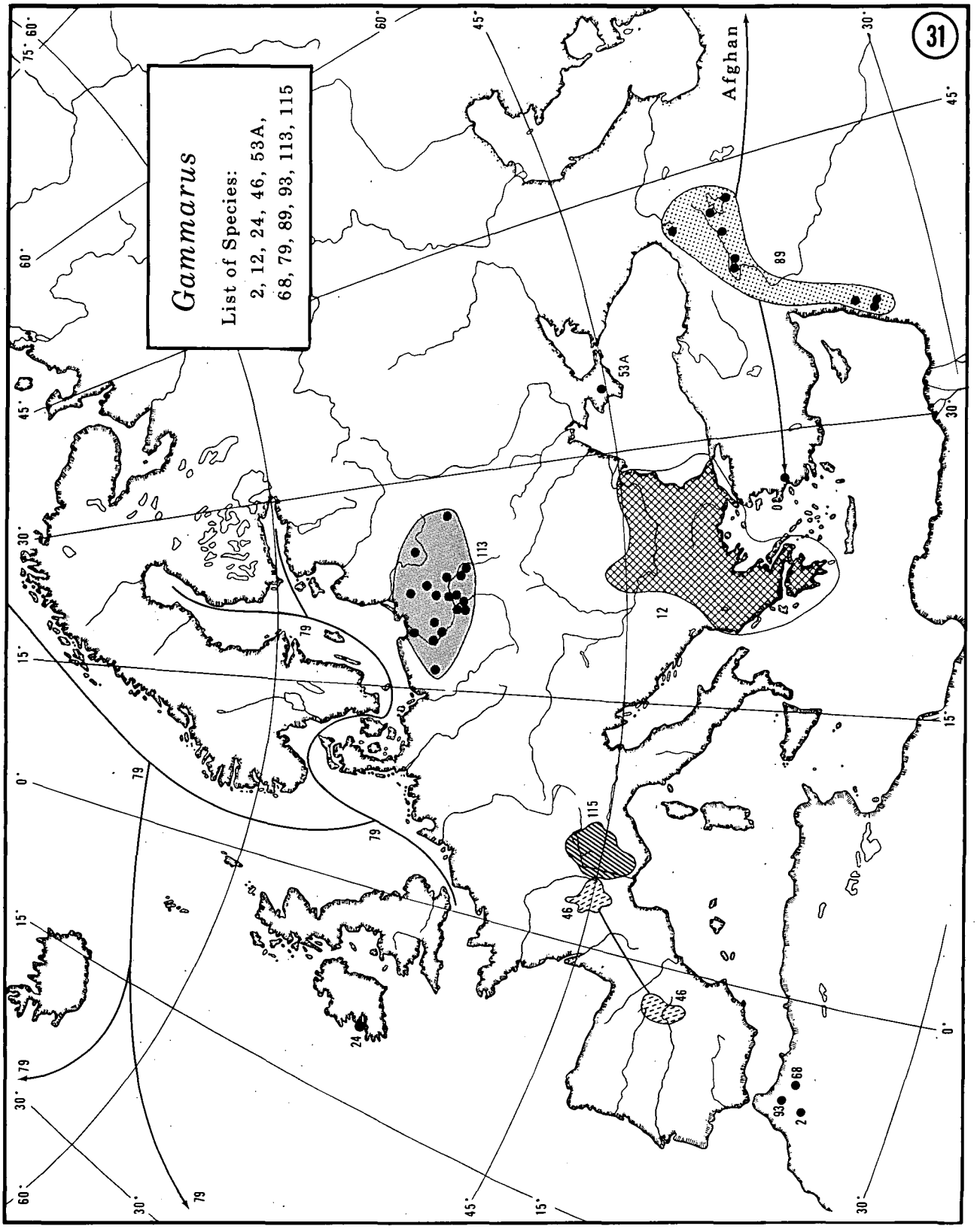
Map 28. Distribution of Gammarus in west Palearctica. See text for species numbers. Major species = balcanicus 14.



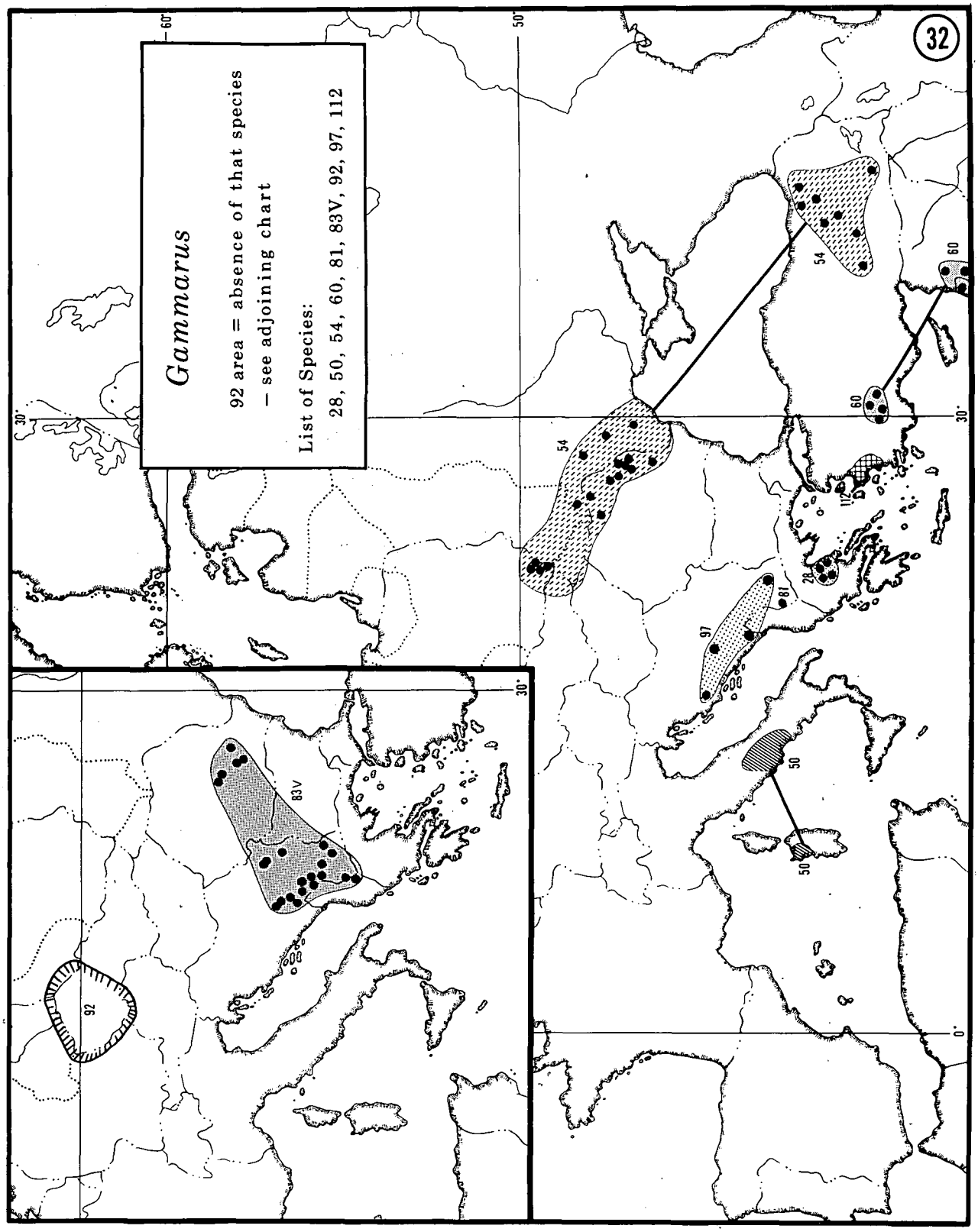
Map 29. Distribution of Gammarus in west Palearctica. See text for species numbers. Major species = fossarum 38.



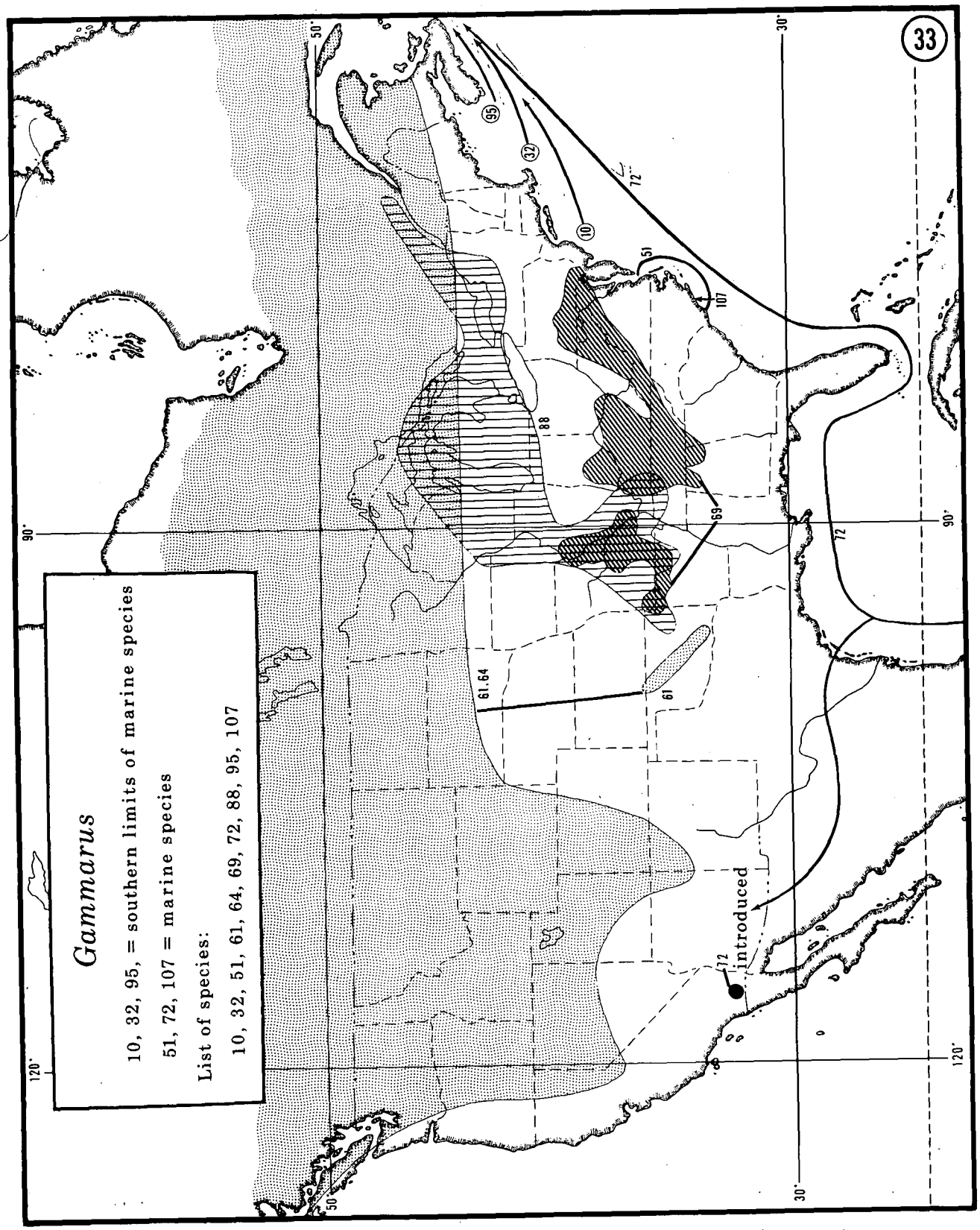
Map 30. Distribution of Gammarus in west Palearctica. See text for species numbers. Major species = roeselii 92.



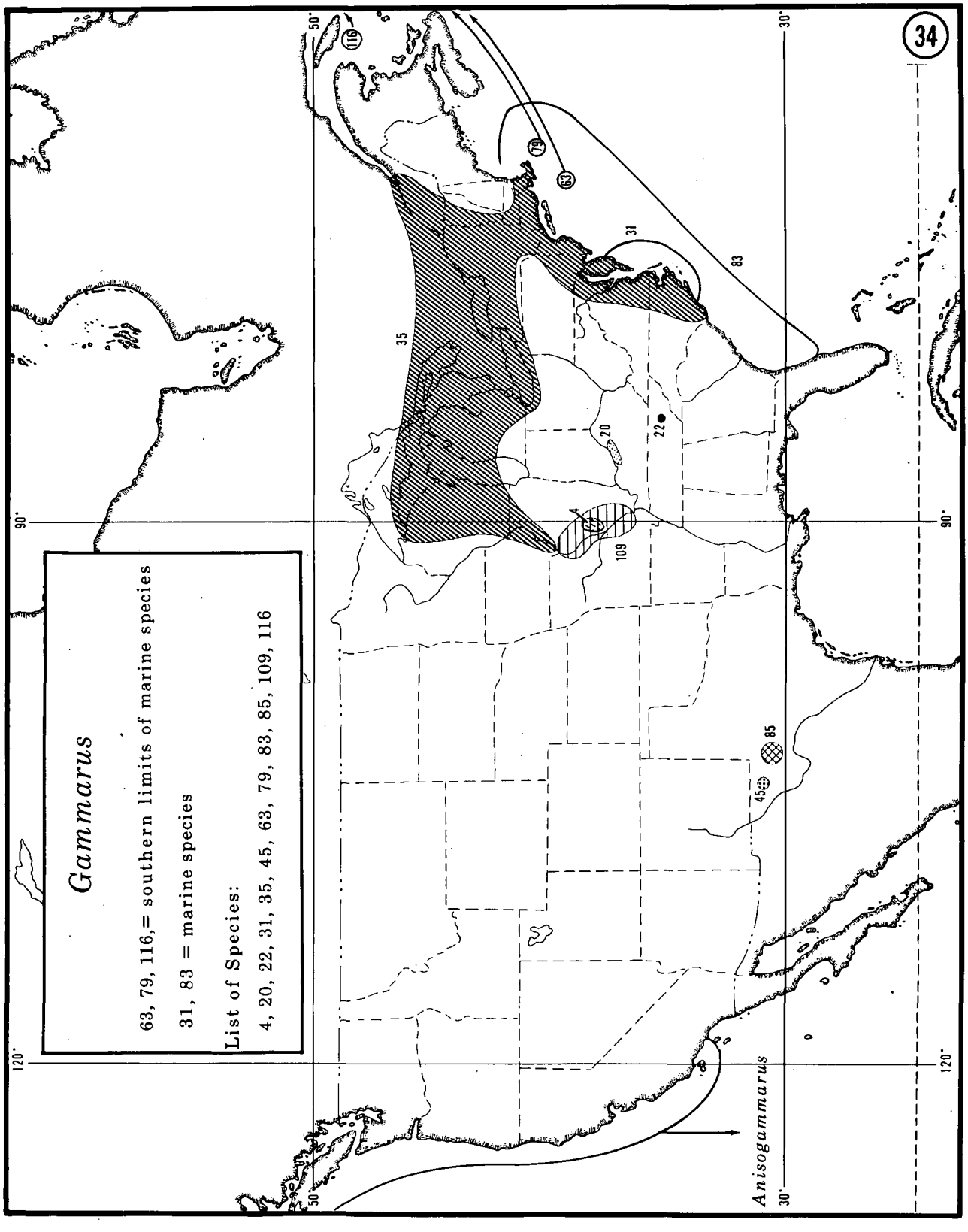
Map 31. Distribution of Gammarus in west Palearctica. See text for species numbers. Major species = arduus 12, pseudosyriacus 89 and varsoviensis 113.



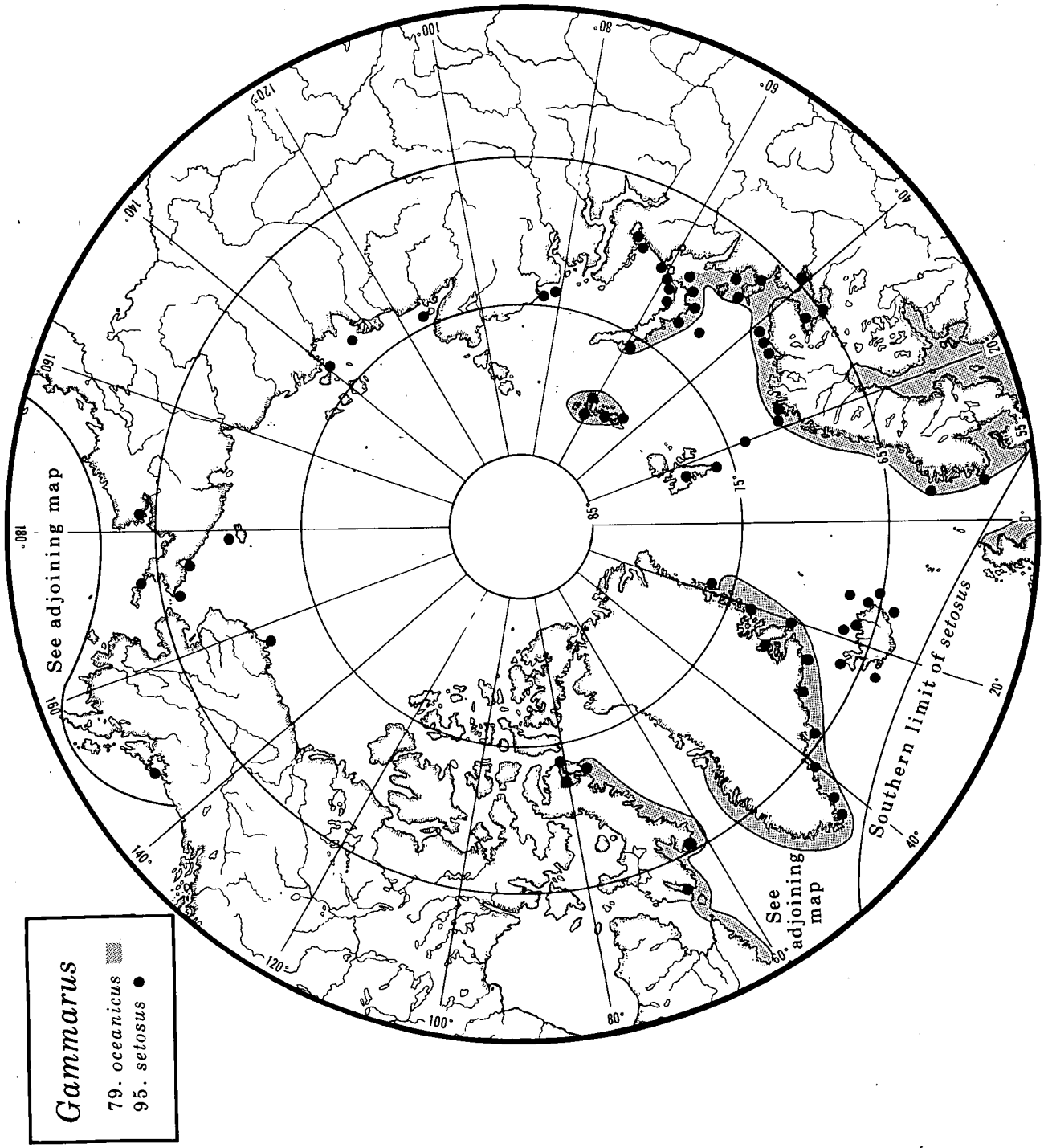
Map 32. Distribution of Gammarus in west Palearctica. See text for species numbers. Major species = kischiniffensis 54 and pavlovici 83V. Area shown for roeselii 92 is negative distribution.



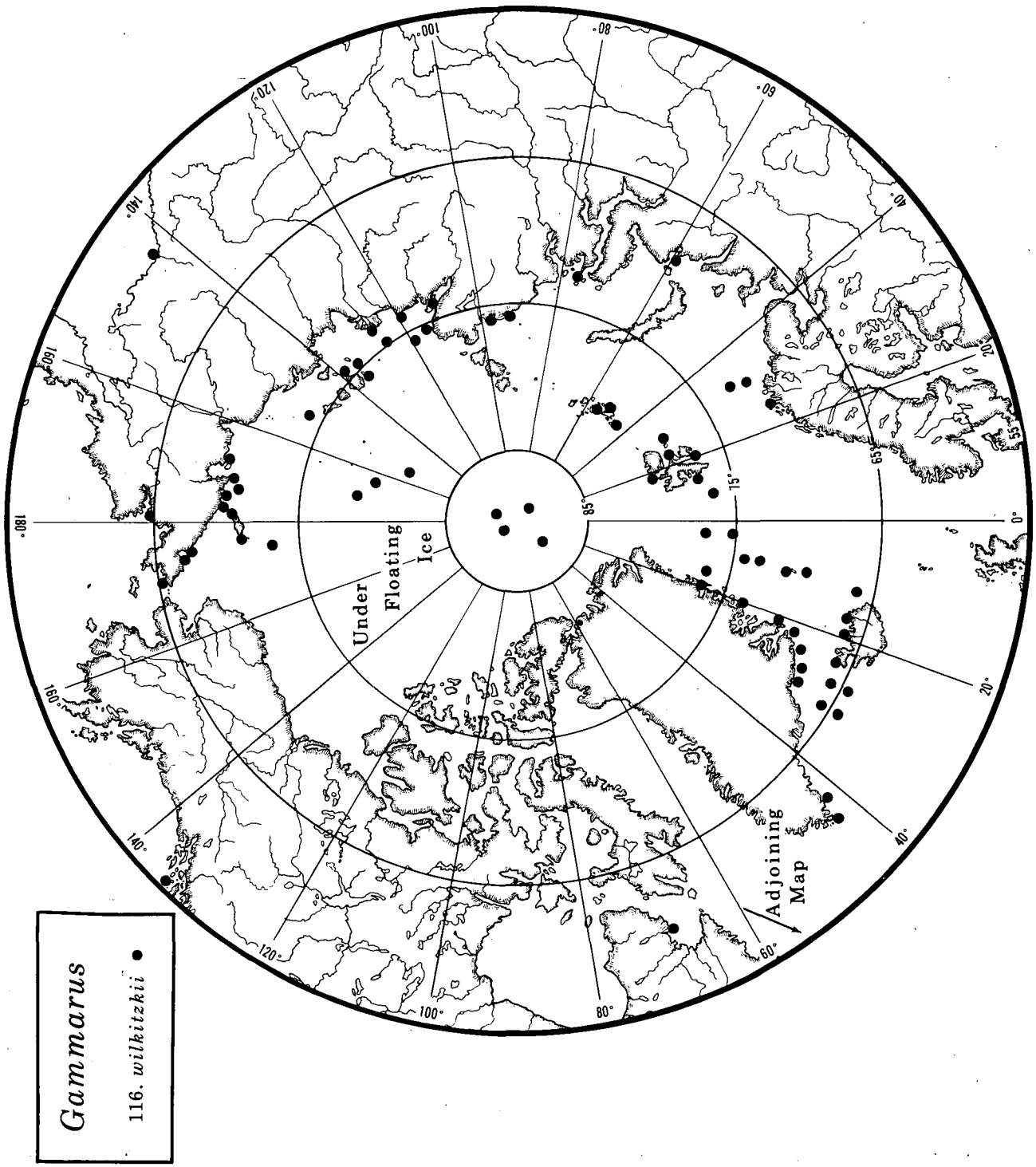
Map 33. Distribution of Gammarus in North America. See text for species numbers. Major species = lacustris 61, limnaeus 64, and pseudolimnaeus 88.



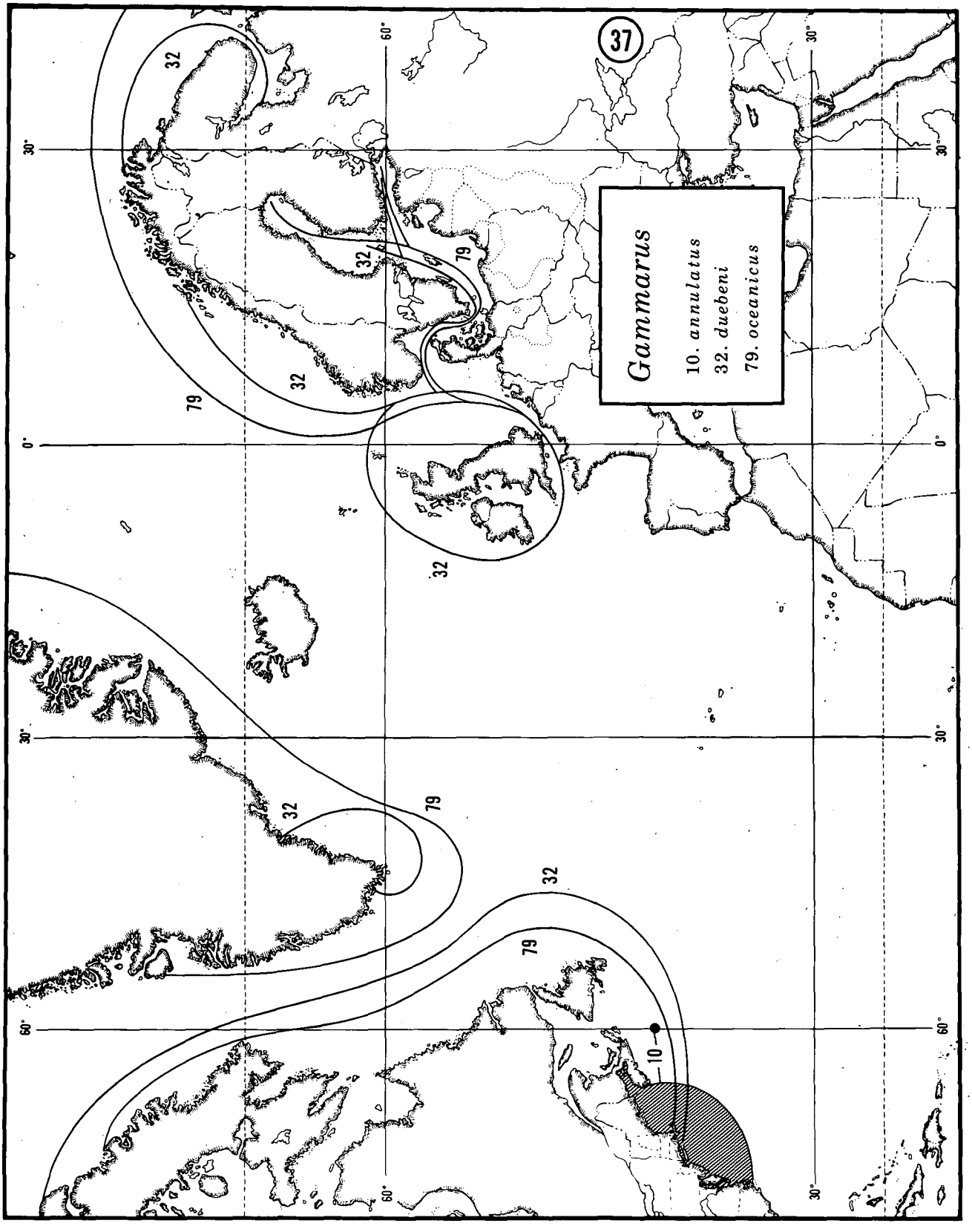
Map 34. Distribution of Gammarus in North America. See text for species numbers. Major species = fasciatus 35.



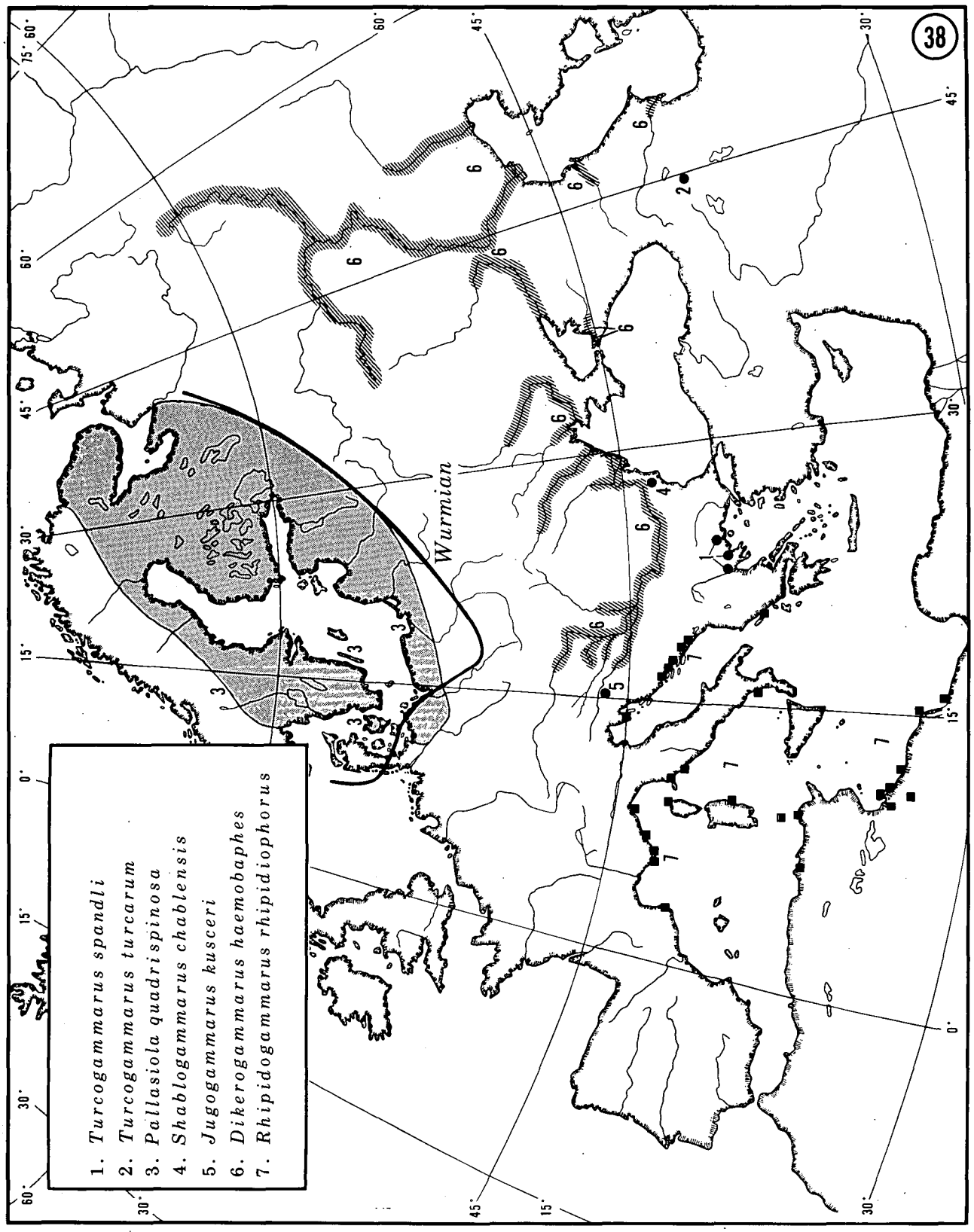
Map 35. Distribution of marine Gammarus on polar projection. Species are oceanicus 79 and setosus 95.



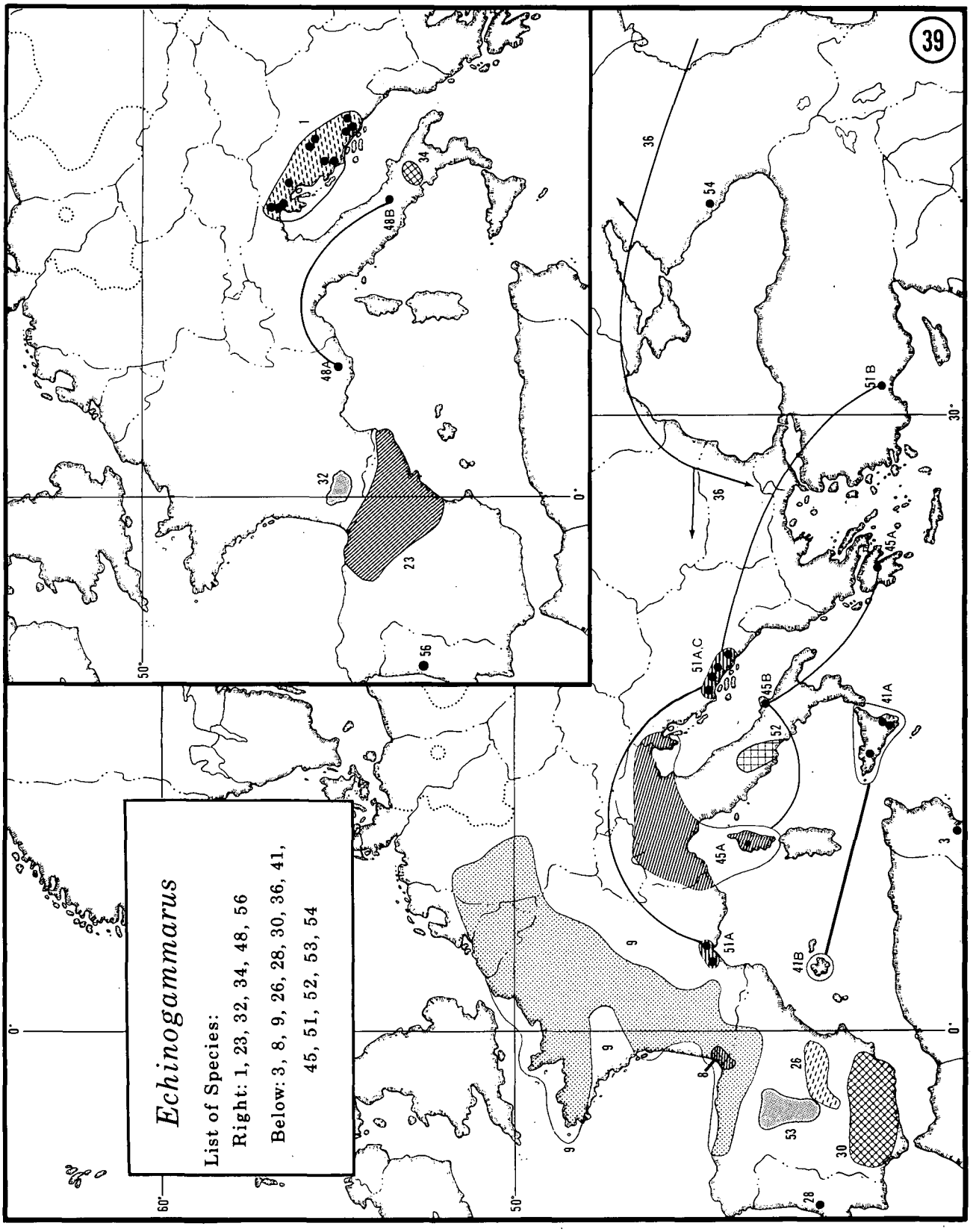
Map 36. Distribution of marine Gammarus wilkitzkii 116 on polar projection.



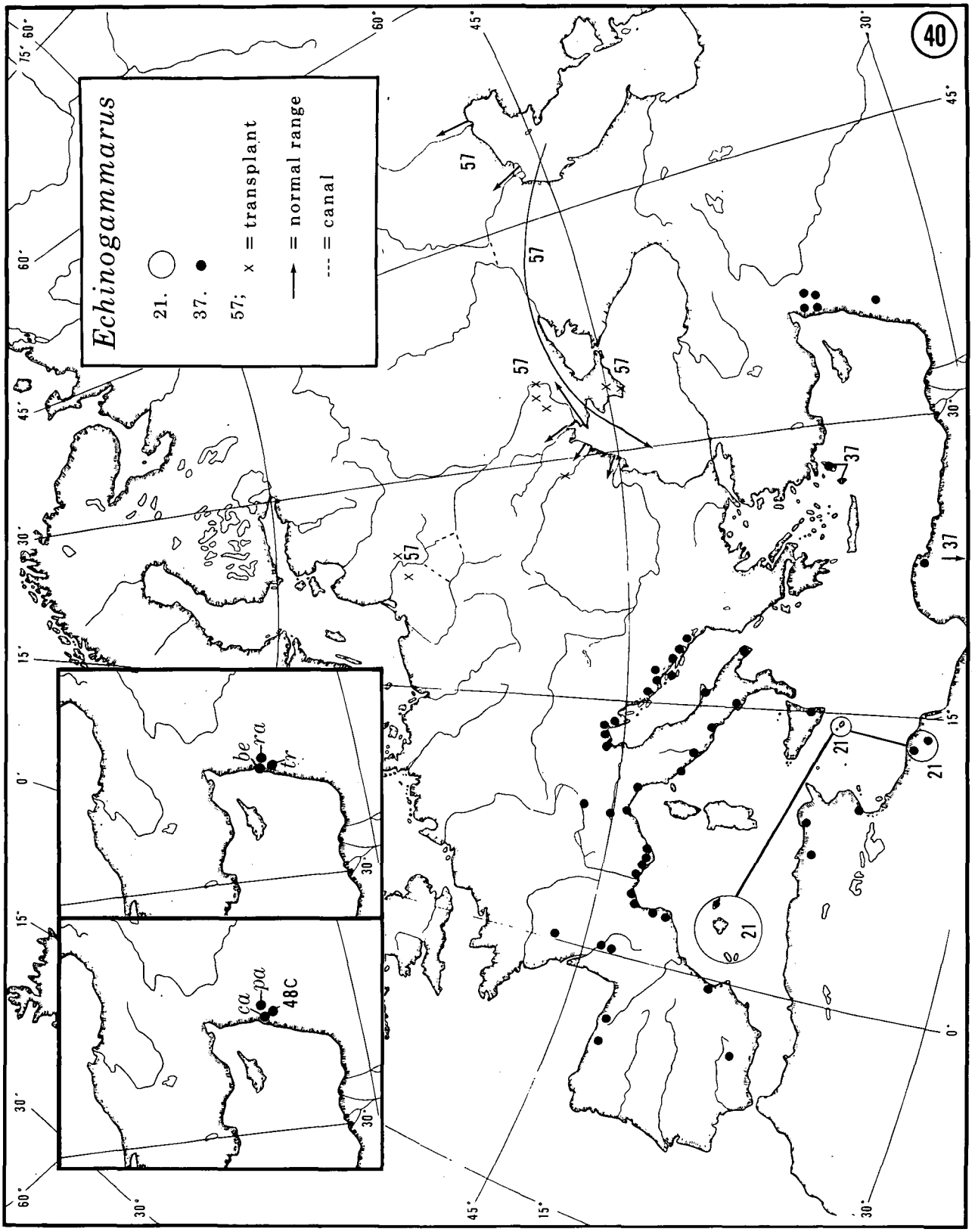
Map 37. Distribution of marine Gammarus of boreal Atlantic. Species are annulatus 10, duebeni 32 and oceanicus 79.



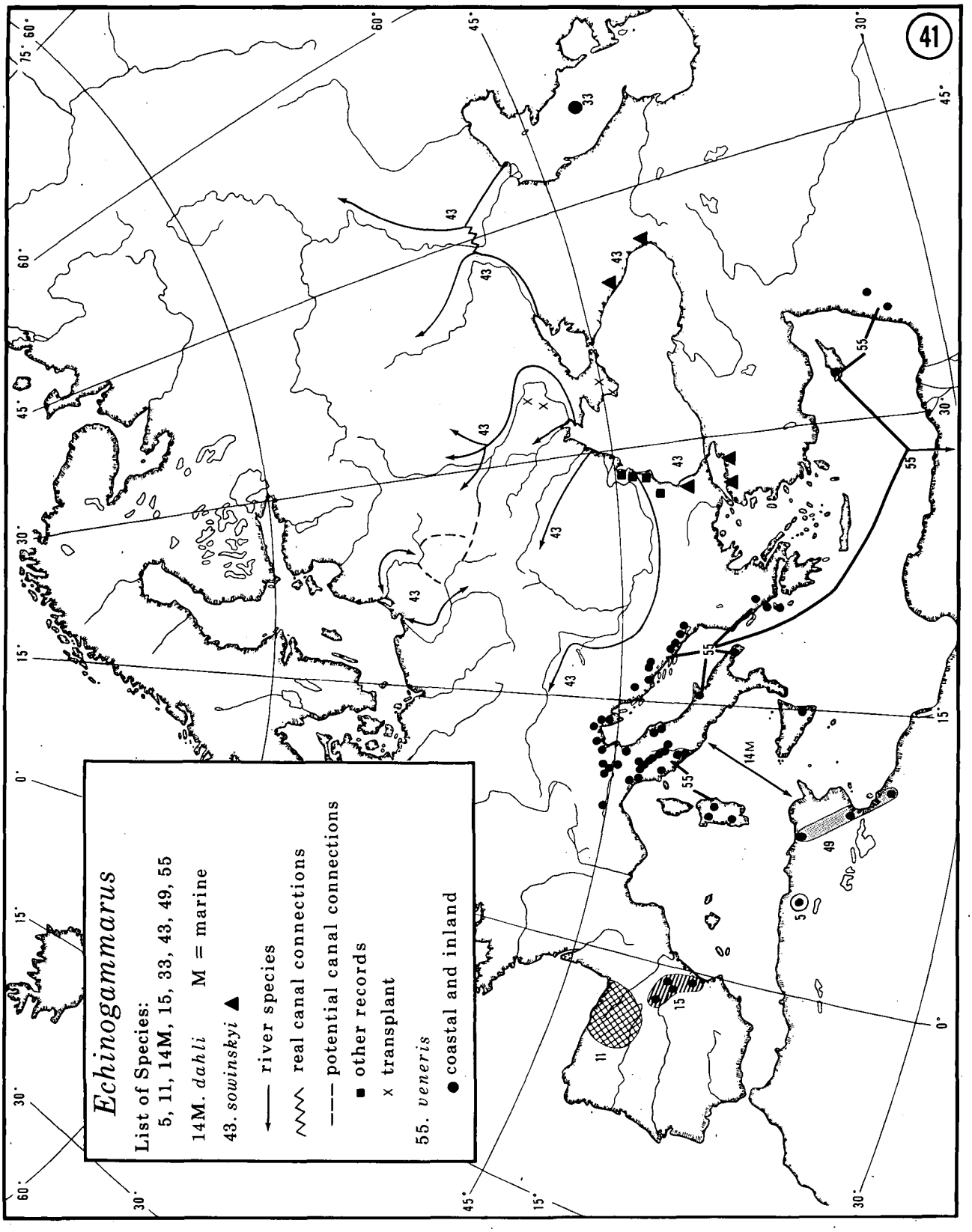
Map 38. Distribution of various Gammaroids in west Palearctica. See legend for species. Major genera = Pallasiola and Rhipidogammarus.



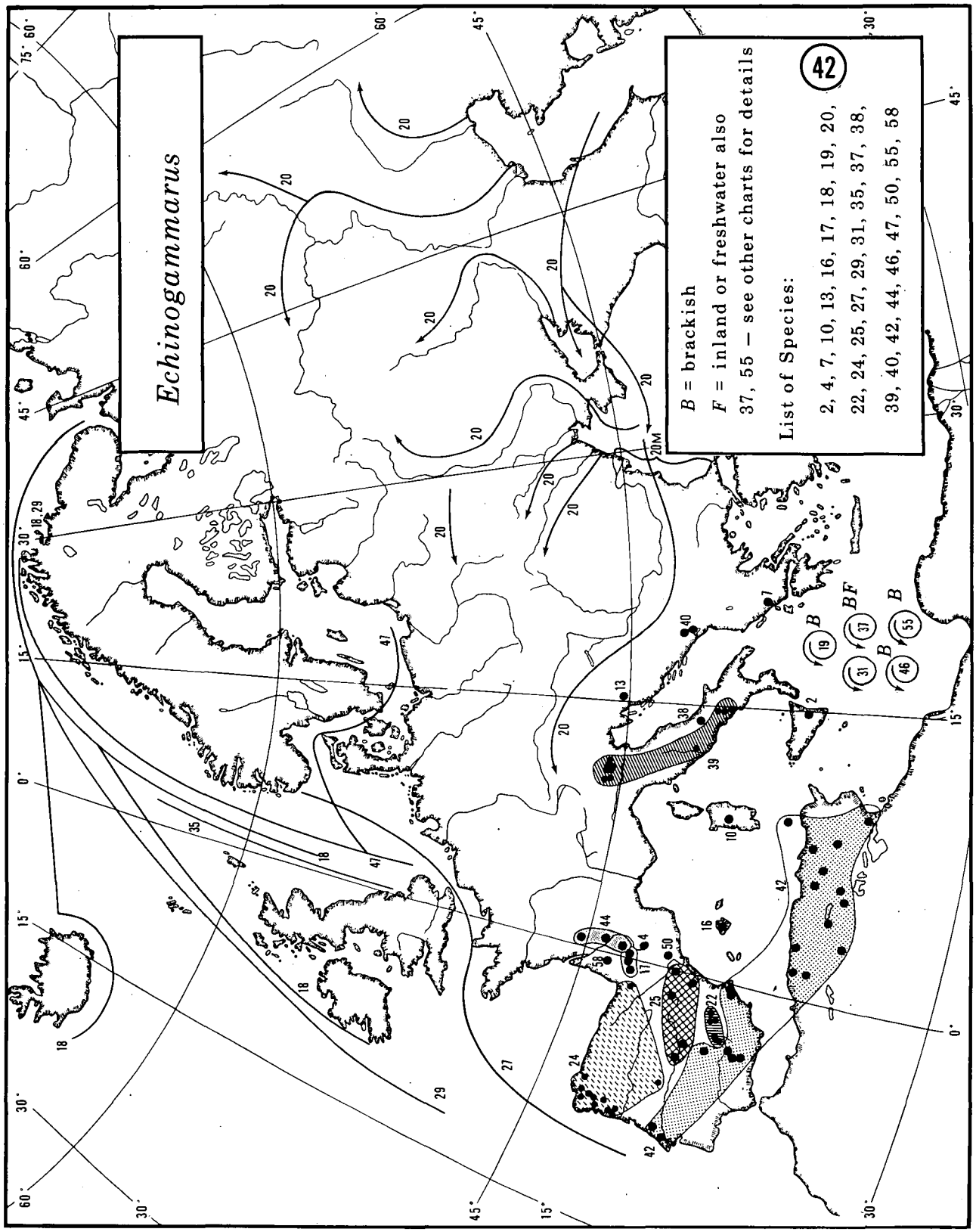
Map 39. Distribution of Echinogammarus in west Palearctica. See text for species numbers. Major species = berilloni 9 and longisetosus 23.



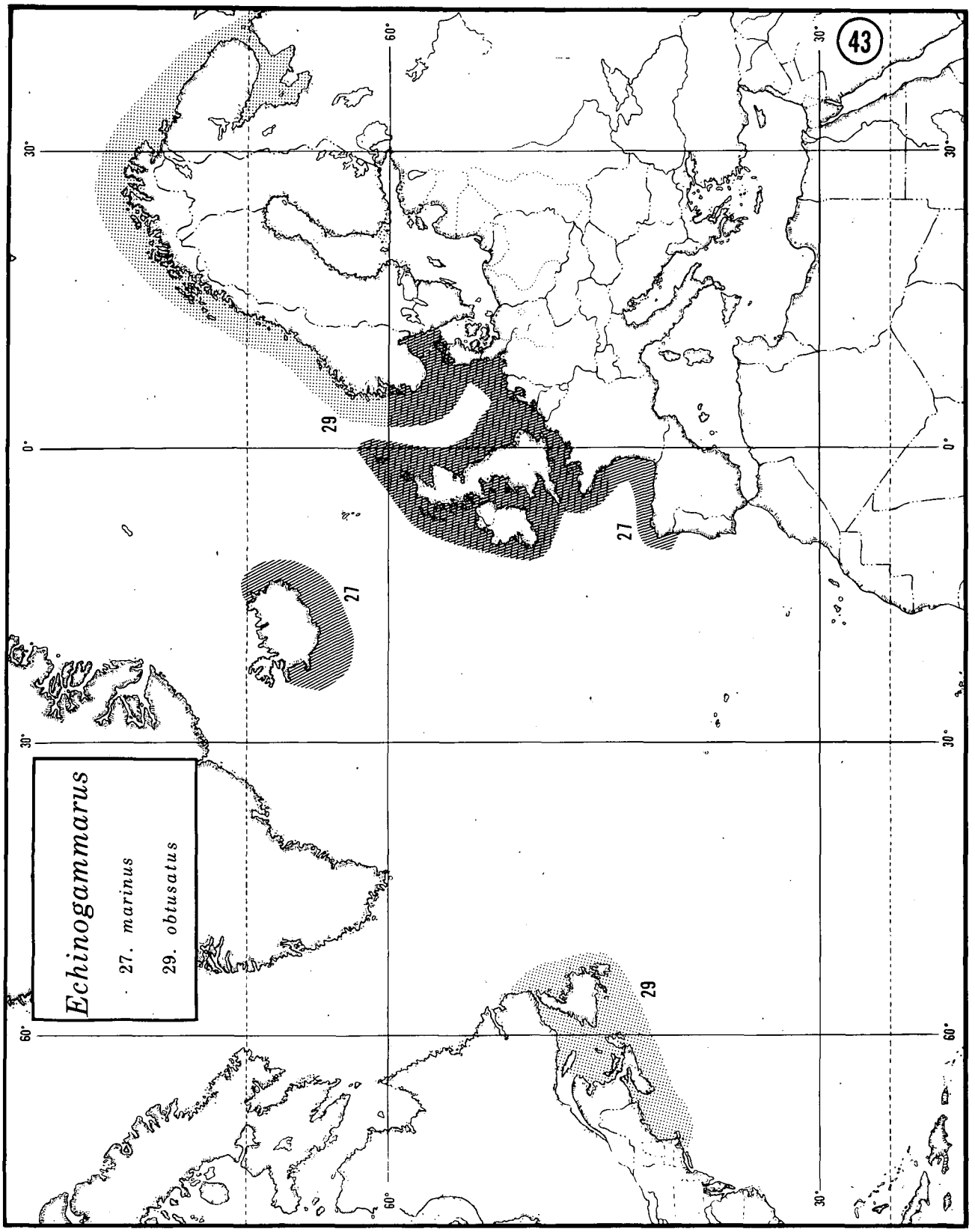
Map 40. Distribution of Echinogammarus in west Palearctica. See text for species numbers. Major species = pungens 37 and warpachowskyi 57.



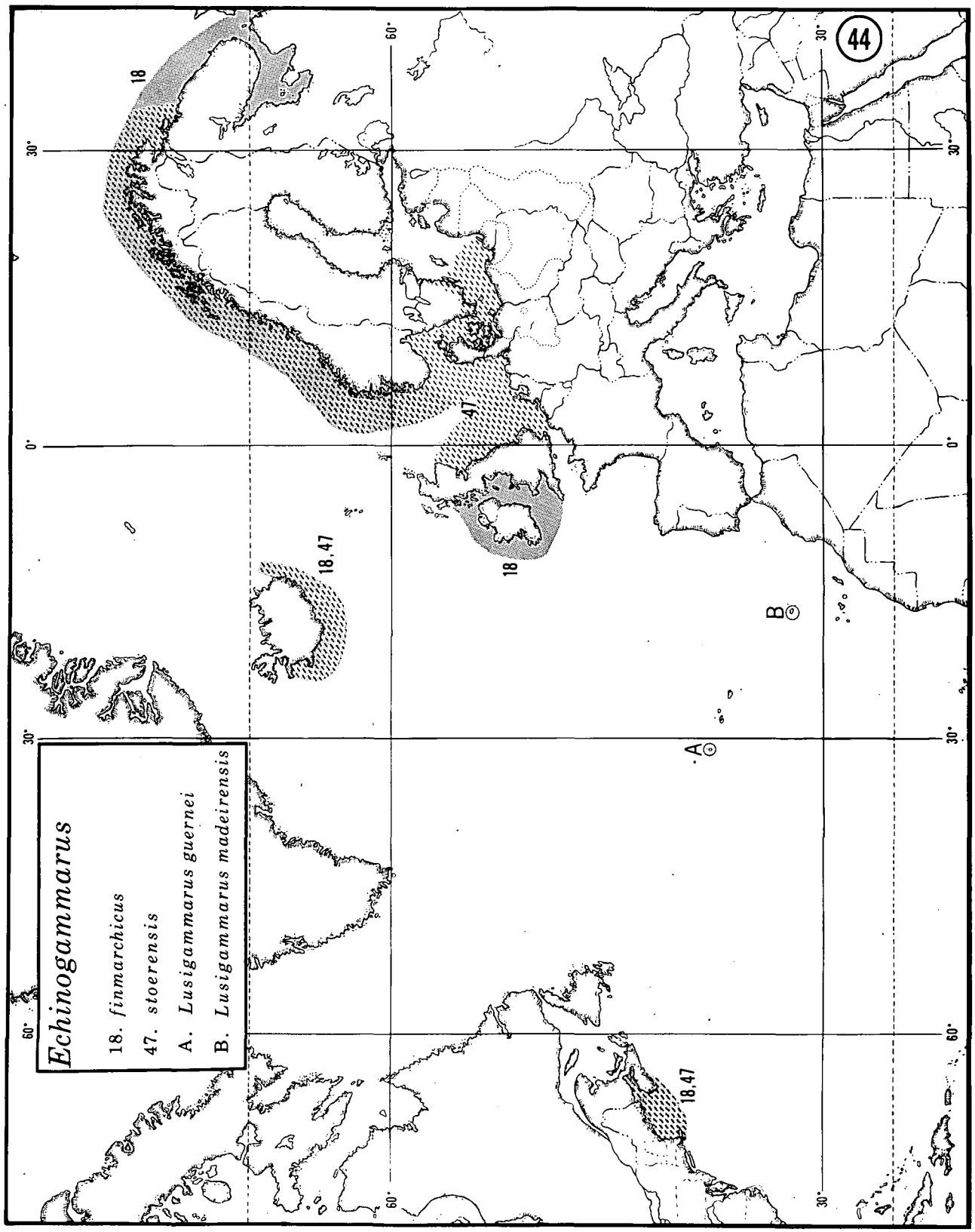
Map 41. Distribution of Echinogammarus in west Palearctica. See text for species numbers. Major species = sowinskyi 43 and veneris 55.



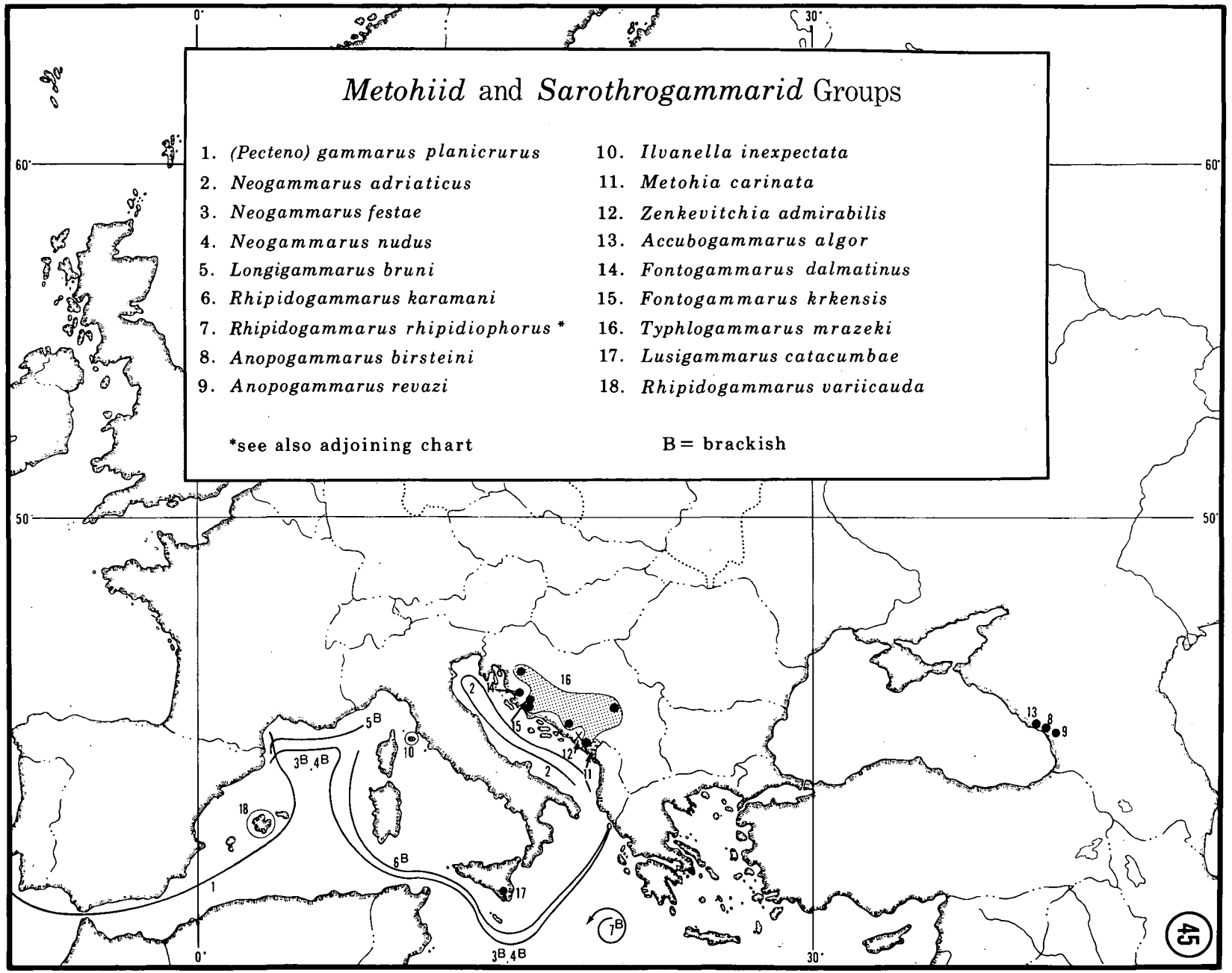
Map 42. Distribution of Echinogammarus in west Palearctica. See text for species numbers. Major species = ischnus 20 and simoni 42.



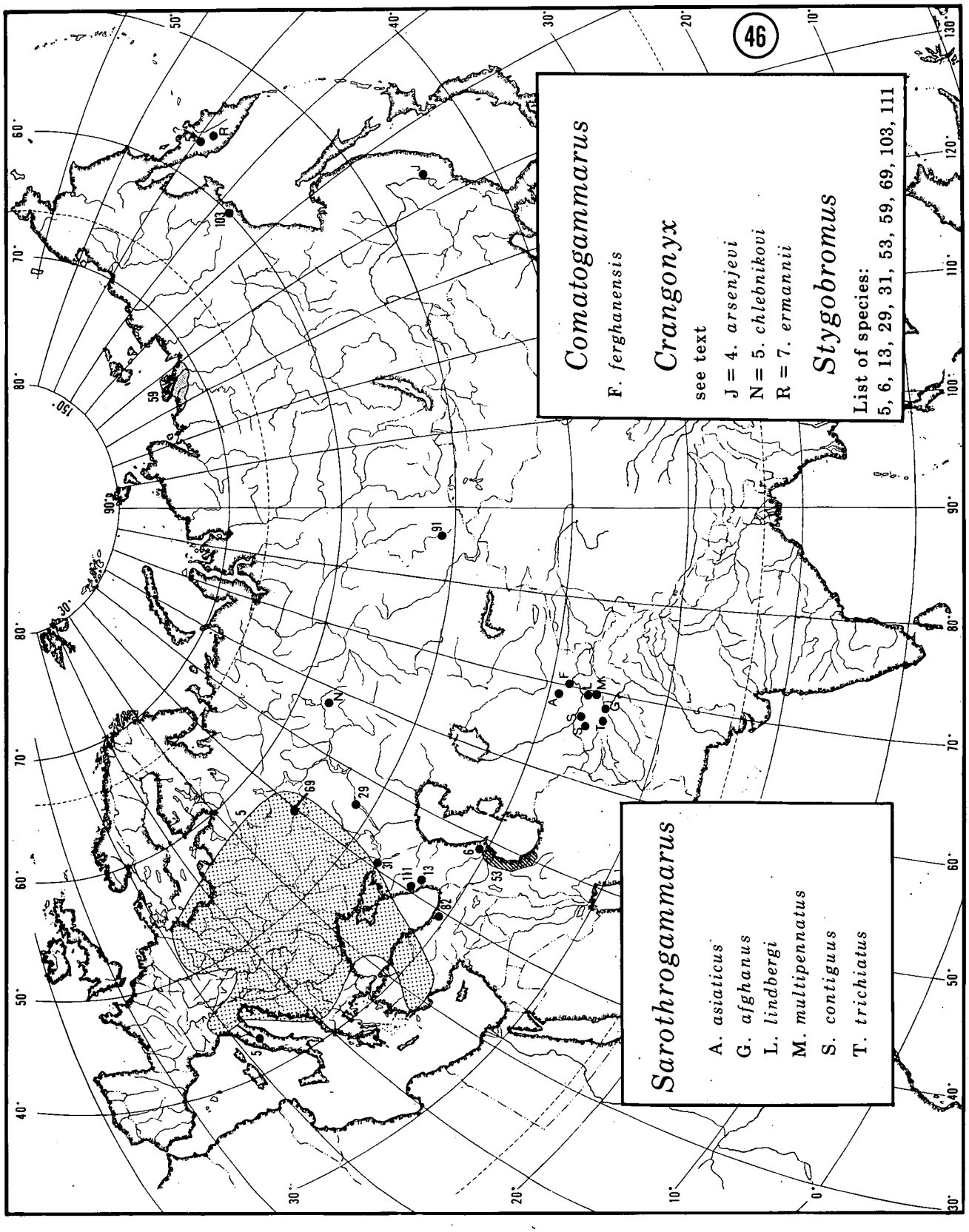
Map 43. Distribution of marine Echinogammarus in boreal Atlantic. Species are marinus 27 and obtusatus 29.



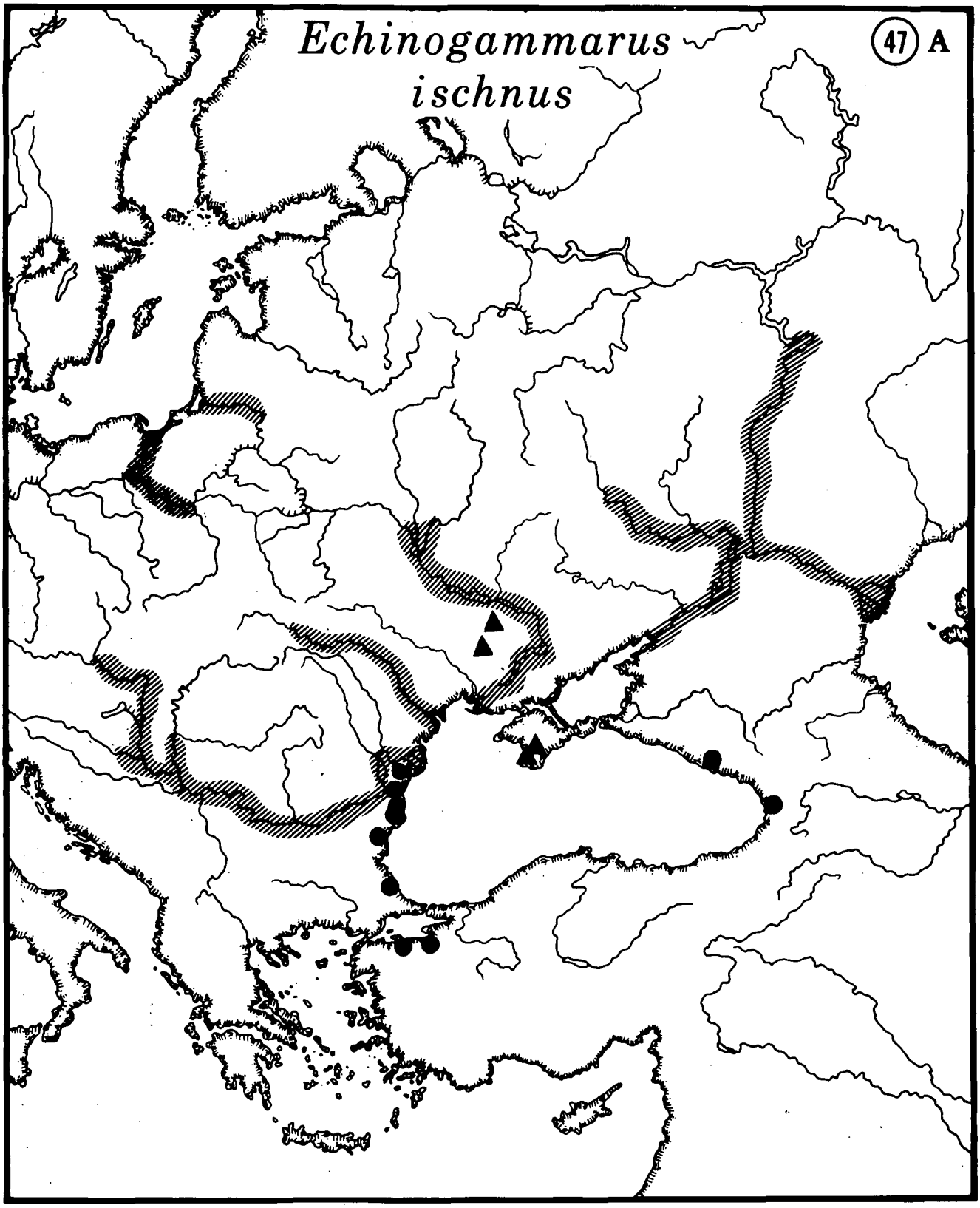
Map 44. Distribution of marine Echinogammarus and insular Lusigammarus in boreal Atlantic. Species are E. finmarchicus 18, E. stoerensis 47, L. guernei A, L. madeirensis B.



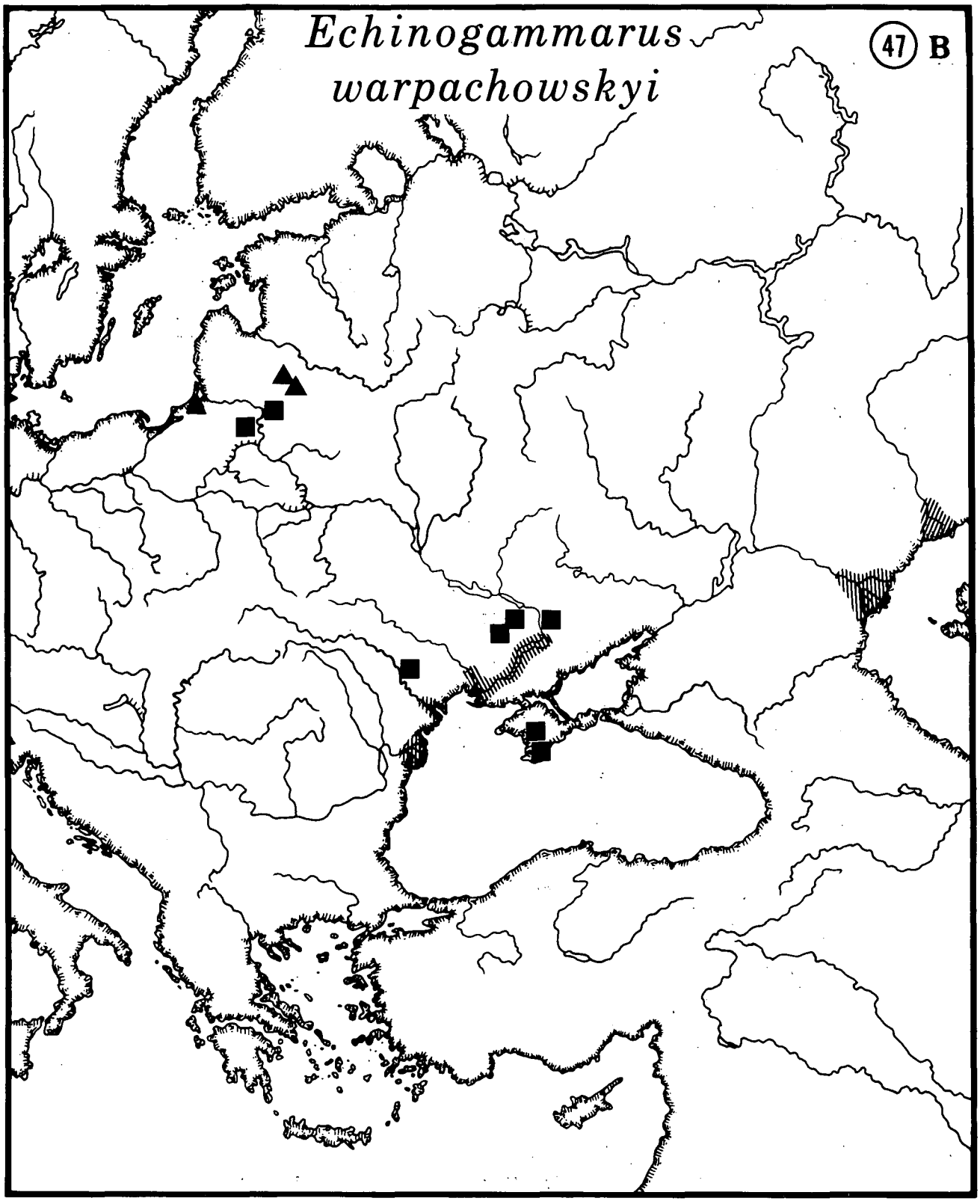
Map 45. Distribution of Metohiids and Sarothrogammarids in west Palearctica. See legend for species.



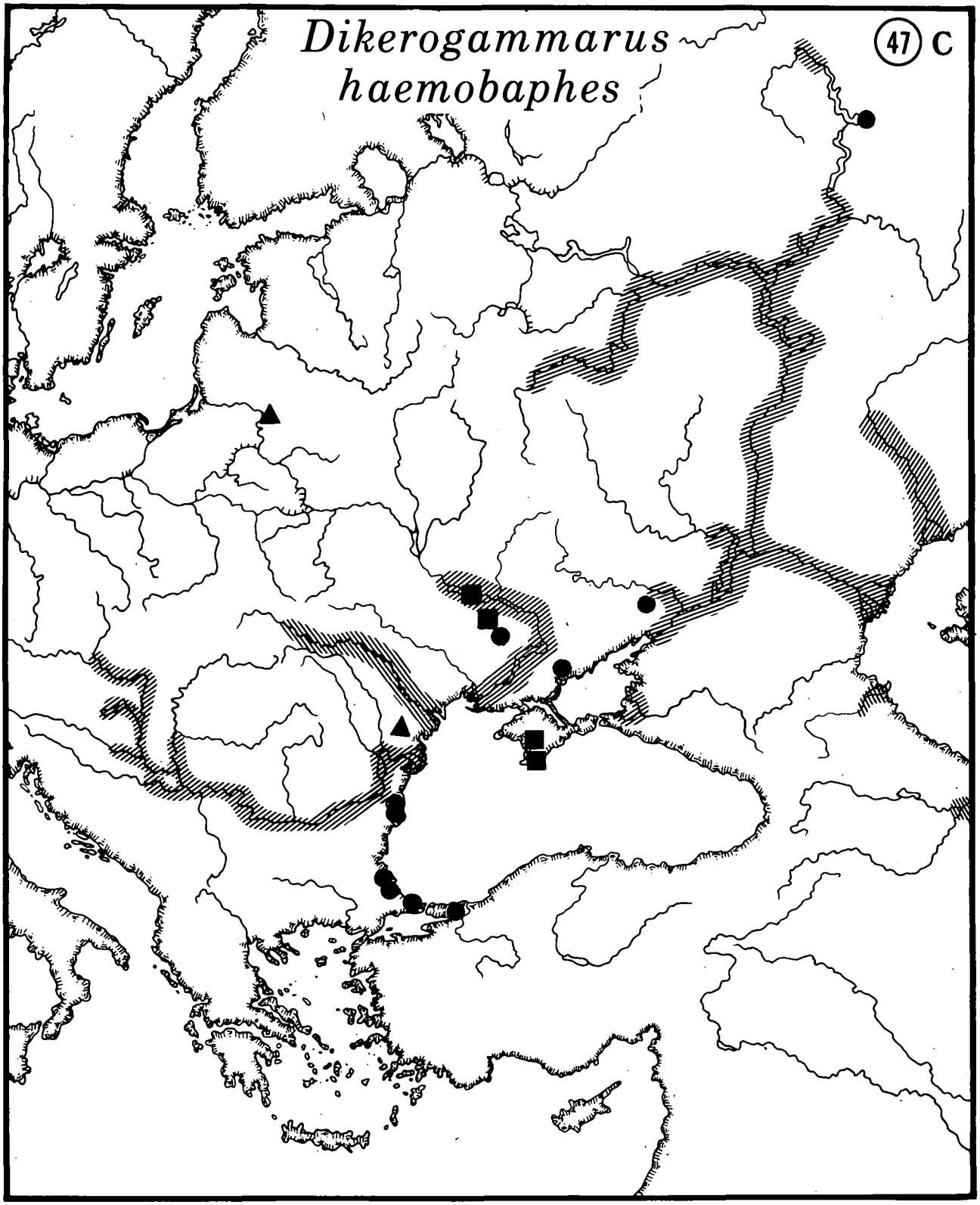
Map 46. Distribution of Sarothrogammarids and Crangonyctids in Palearctica. See legend for species.



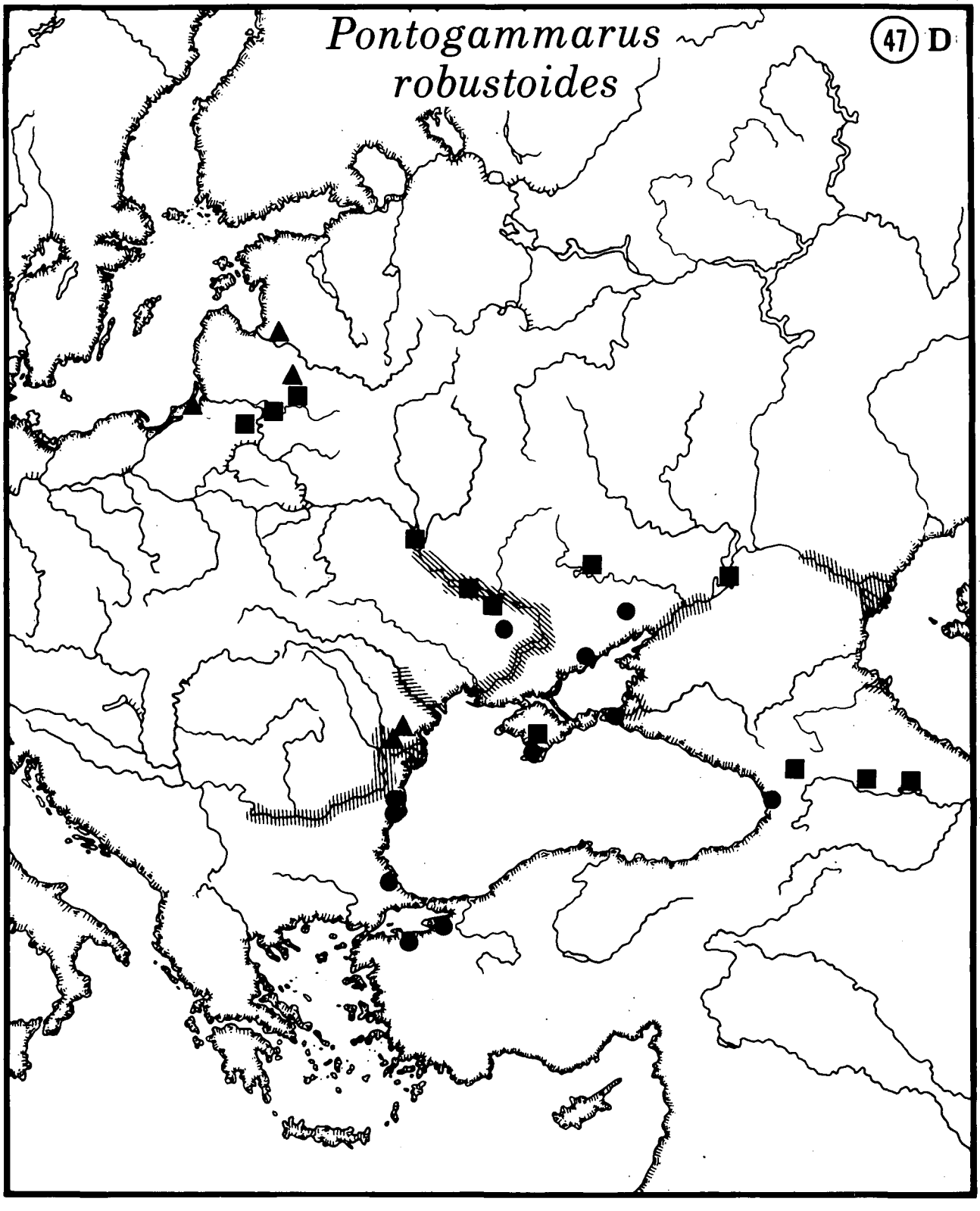
Map 47A. Manipulated species of PontoCaspian. Redrawn from Jazdzewsky, 1980. Hatching or blotting = widespread distribution; dot = successful transplant; open circle = failed transplant attempt.



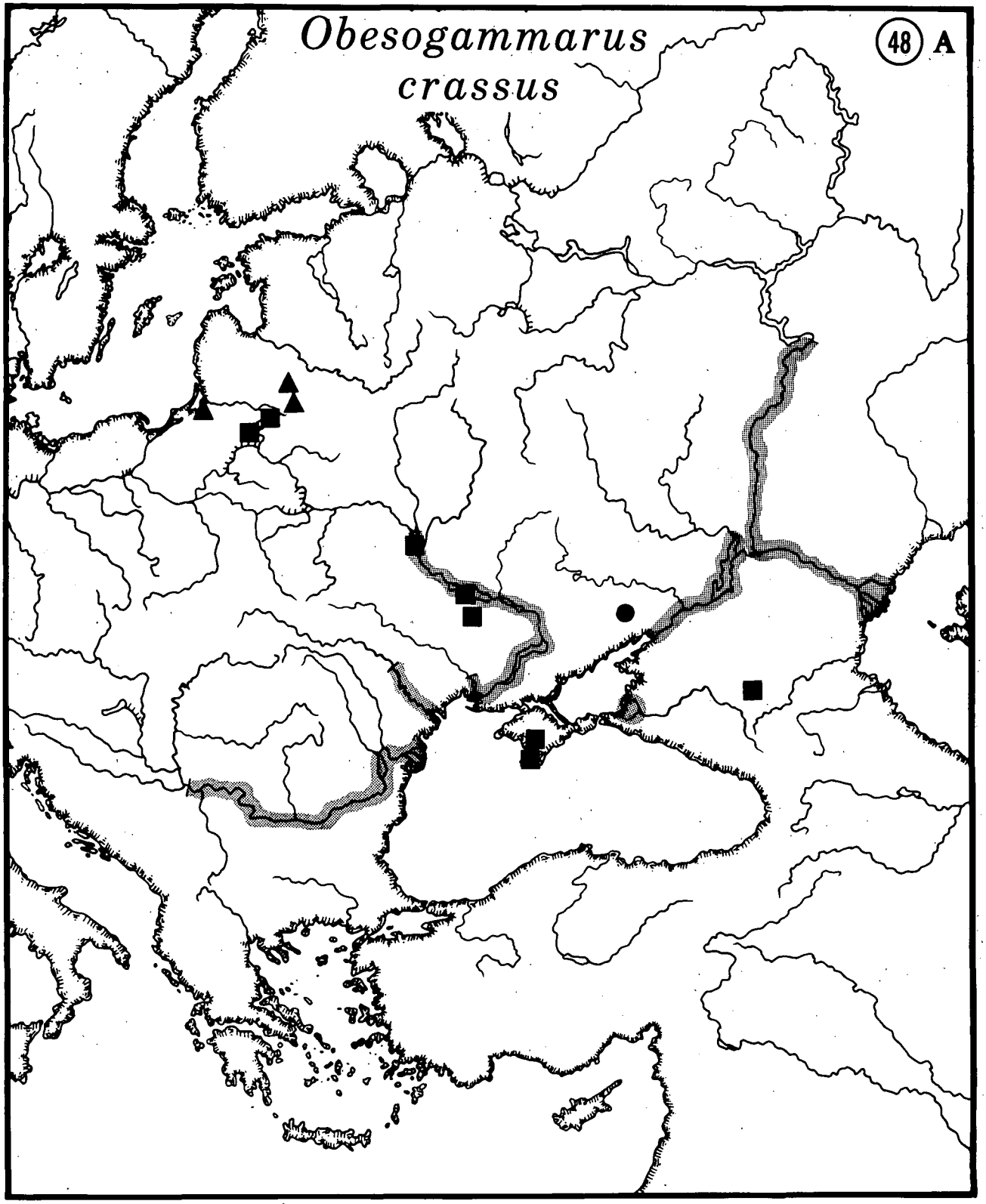
Map 47B. See Map 47A for information.



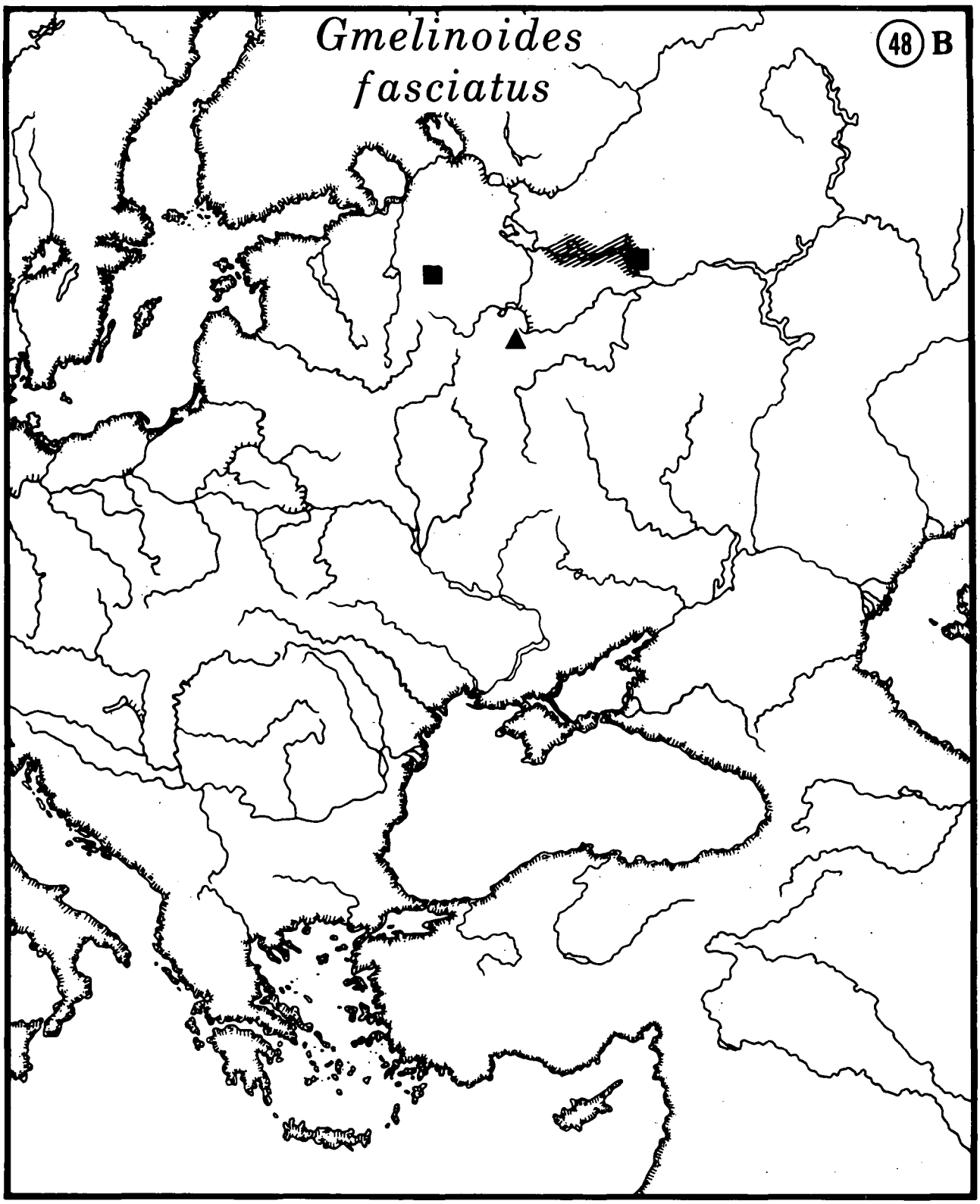
Map 47C. See Map 47A for information.



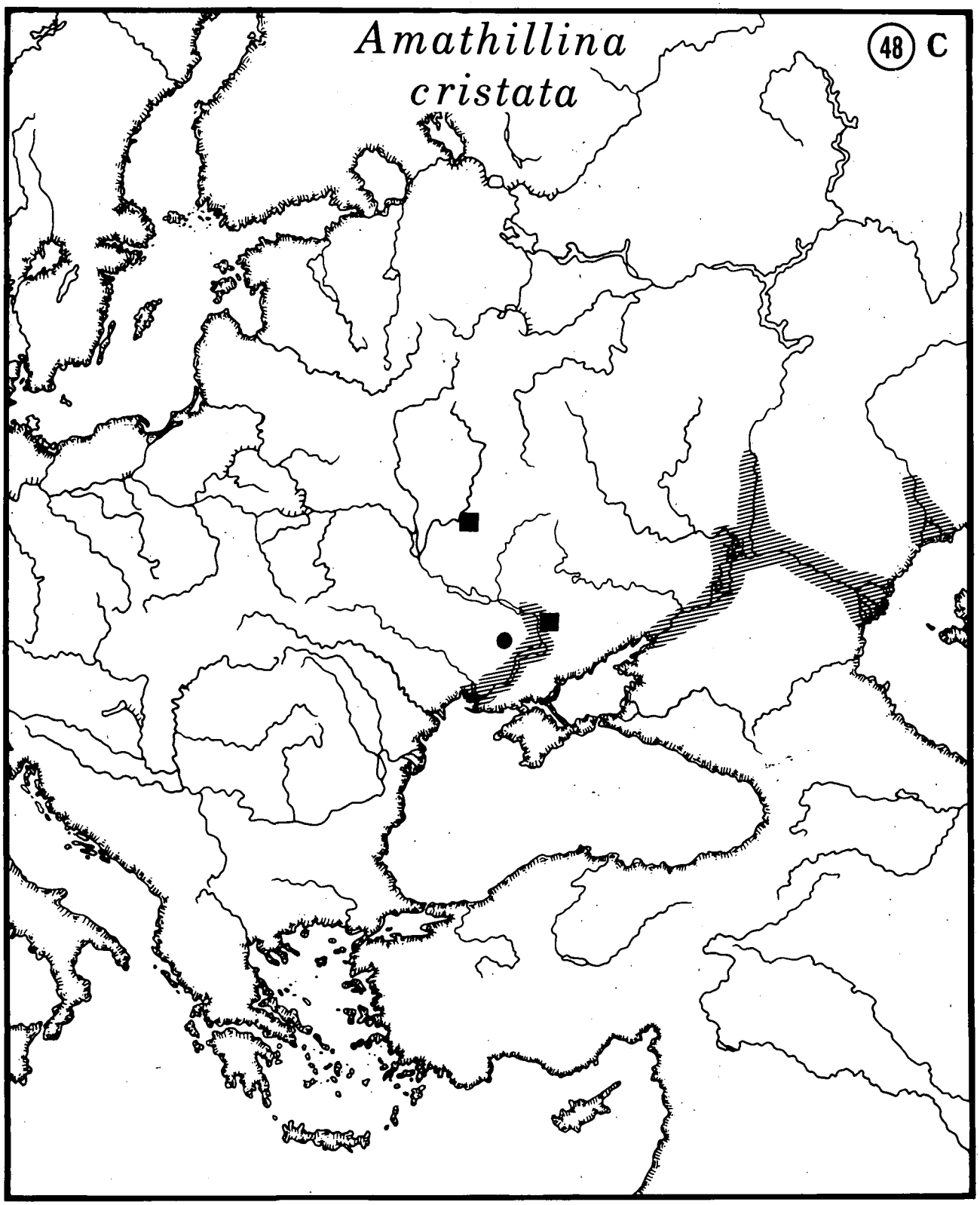
Map 47D. See Map 47A for information.



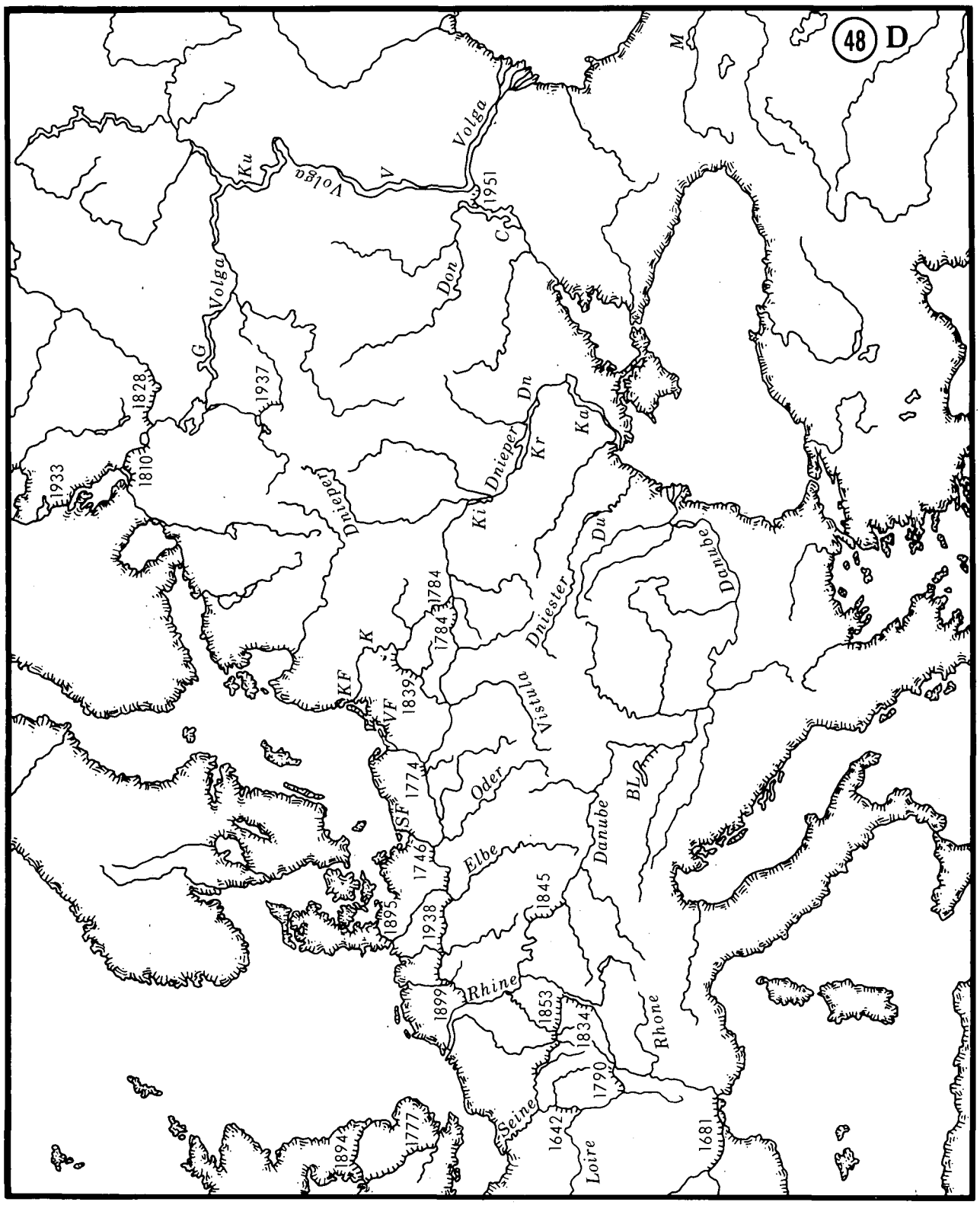
Map 48A. Manipulated species of PontoCaspian. Redrawn from Jazdzewsky, 1980. Hatching or blotting = widespread distribution; dot = successful transplant; open circle = failed transplant attempt.



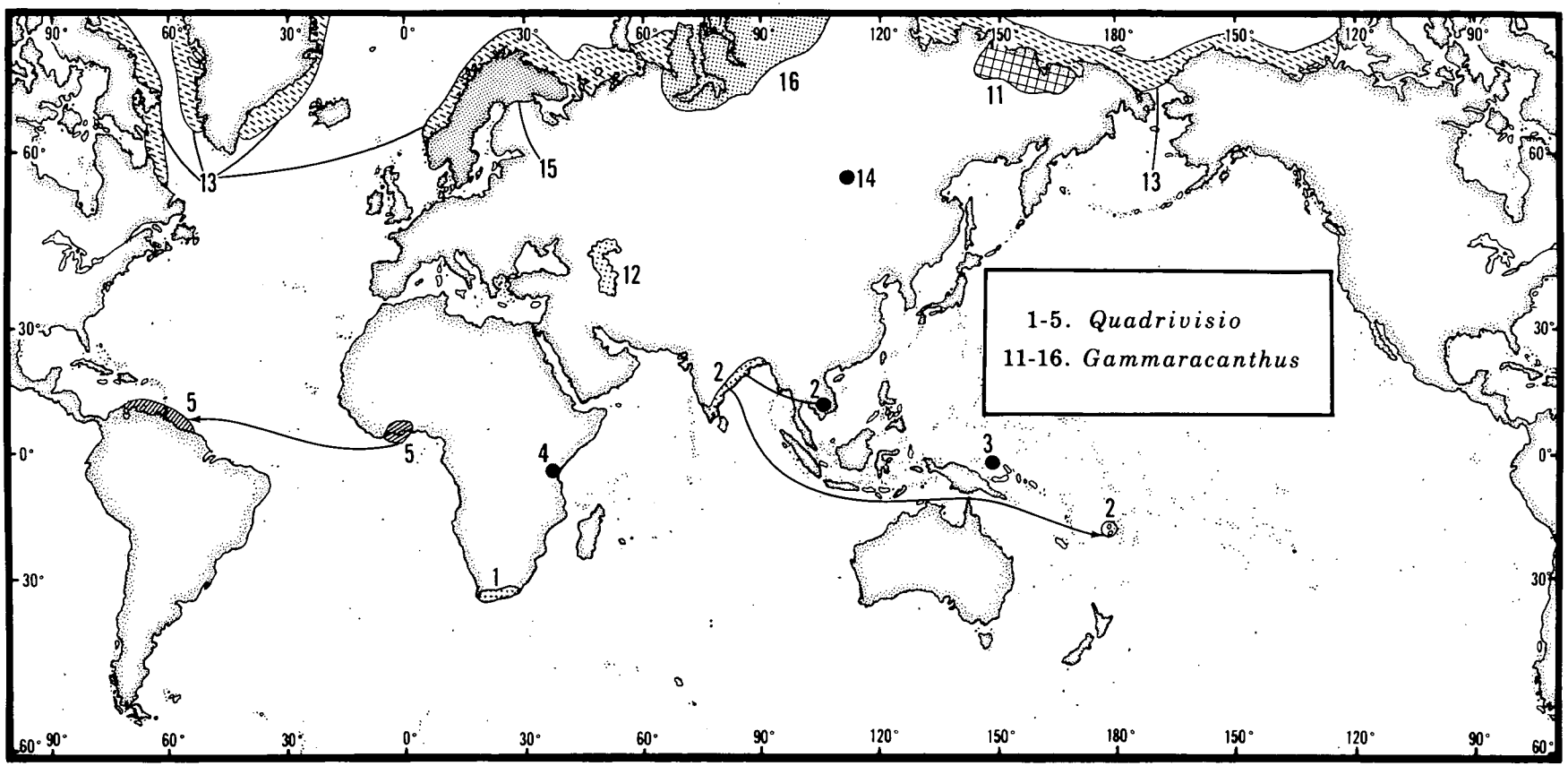
Map 48B. See Map 48A for information.



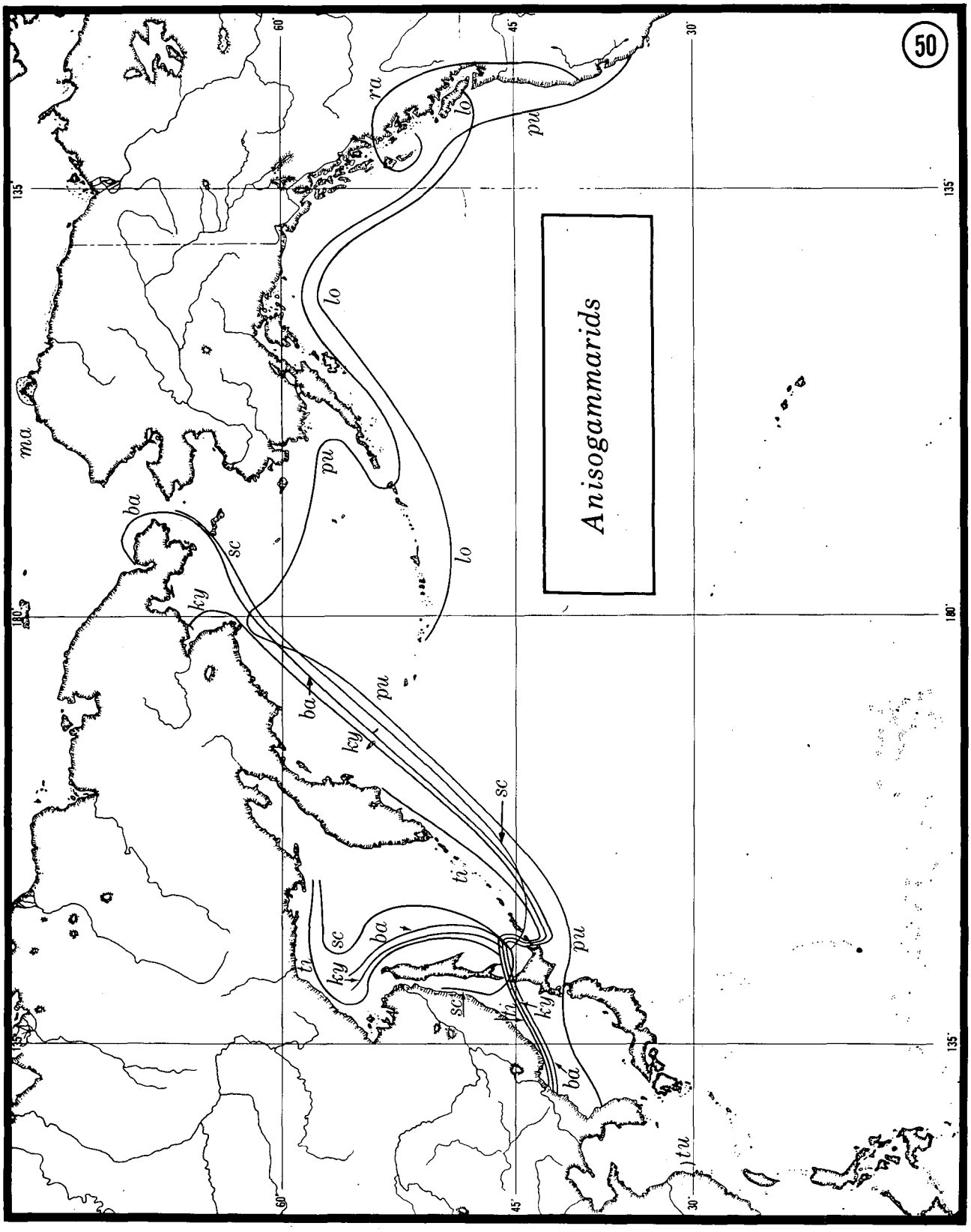
Map 48C. See Map 48B for information.



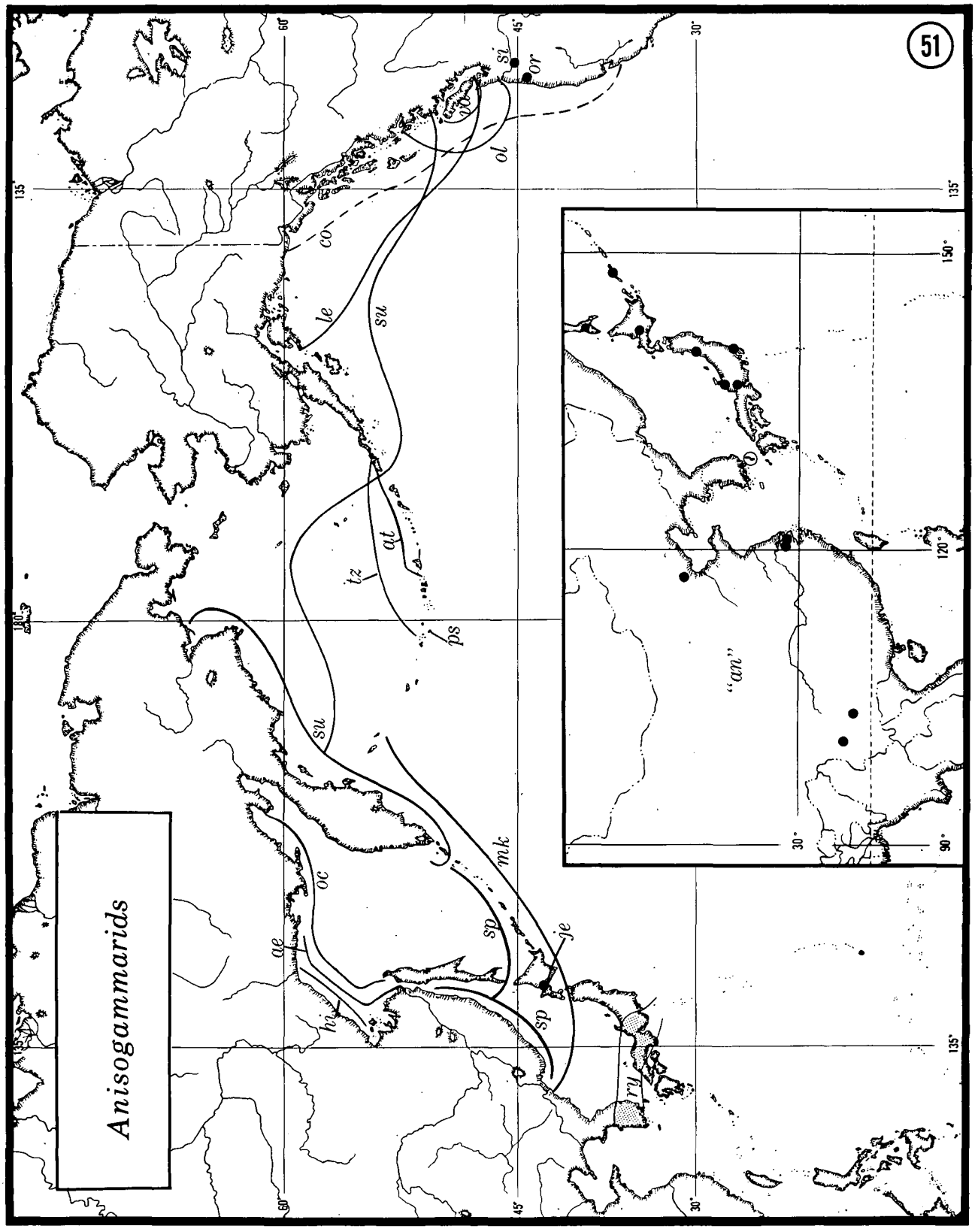
Map 48D. Dates of canal openings in Europe. After Jazdzewsky, 1980.



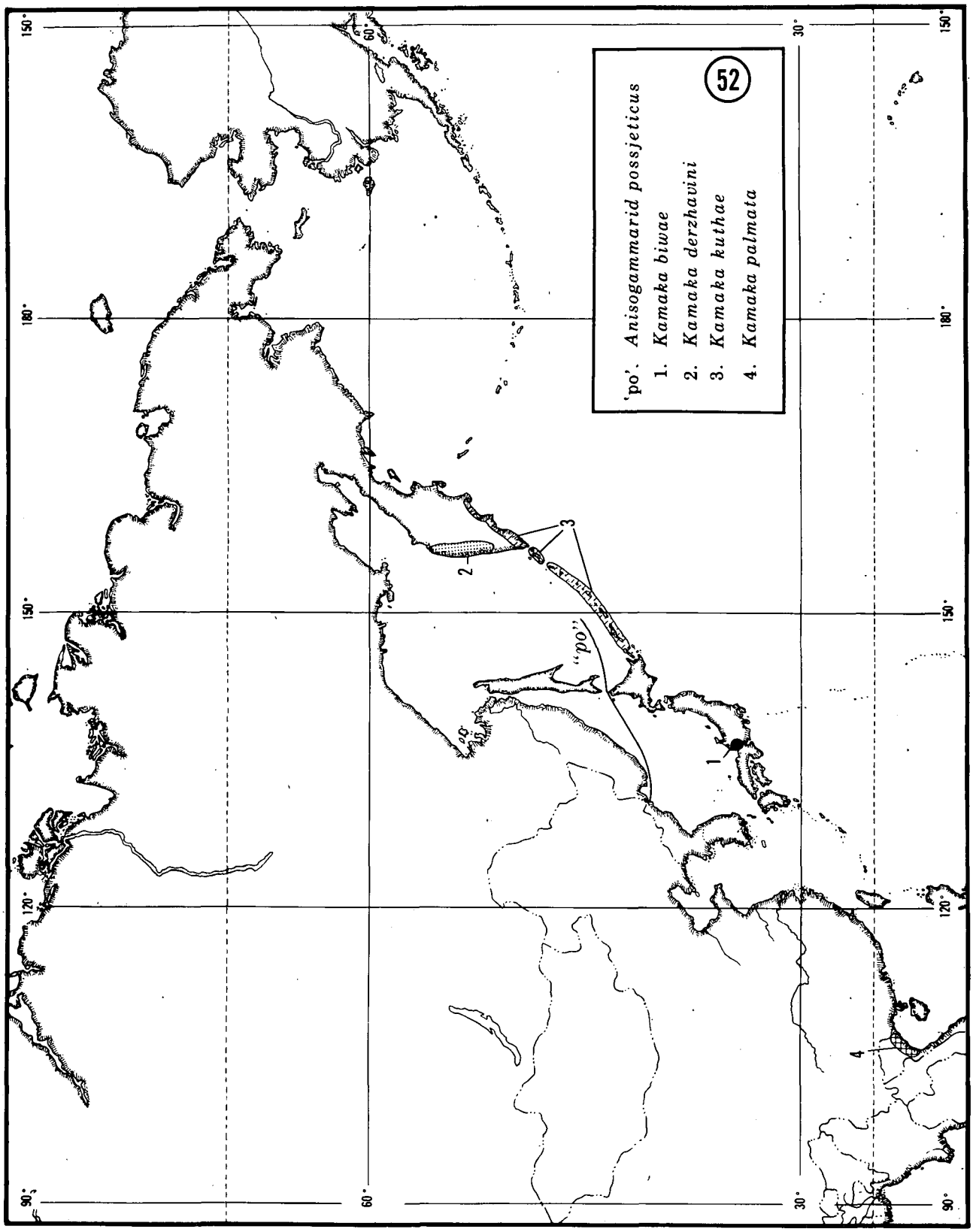
Map 49. Distribution of Quadrivisio and Gammaracanthus in the world. See text for species numbers.



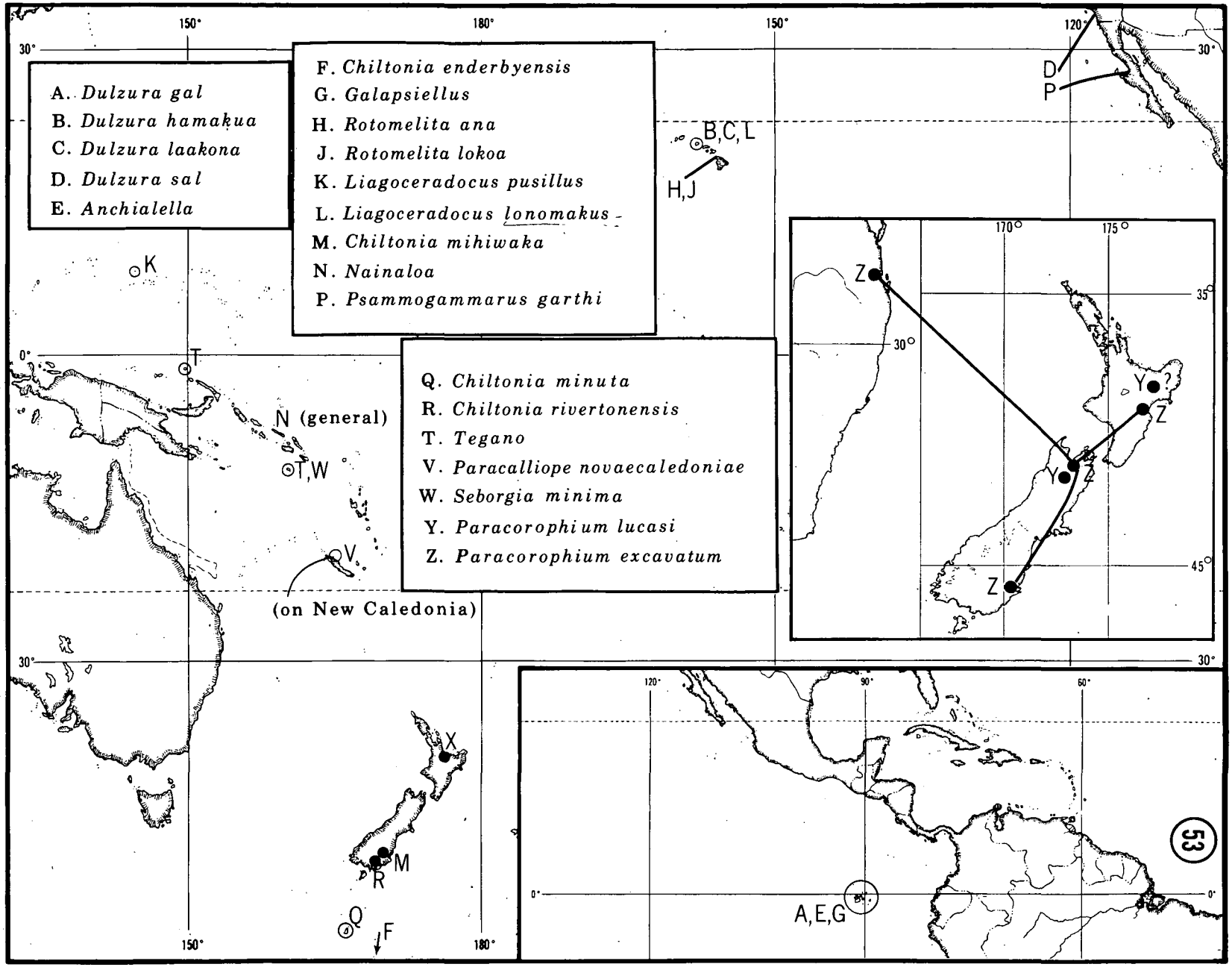
Map 50. Distribution of Anisogammarids in boreal Pacific. See text for species legends.



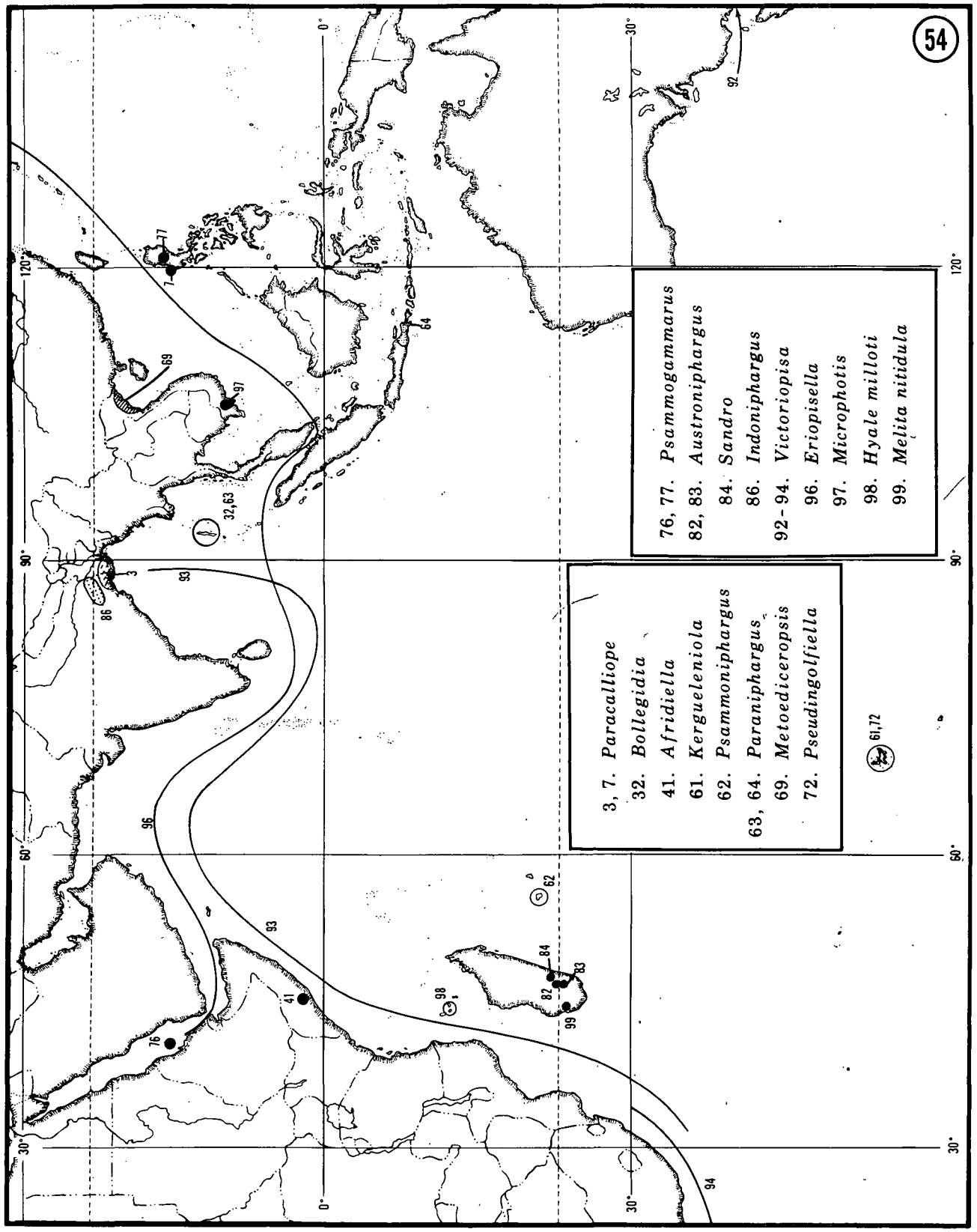
Map 51. Distribution of Anisogammarids in boreal Pacific. See text for species legends.



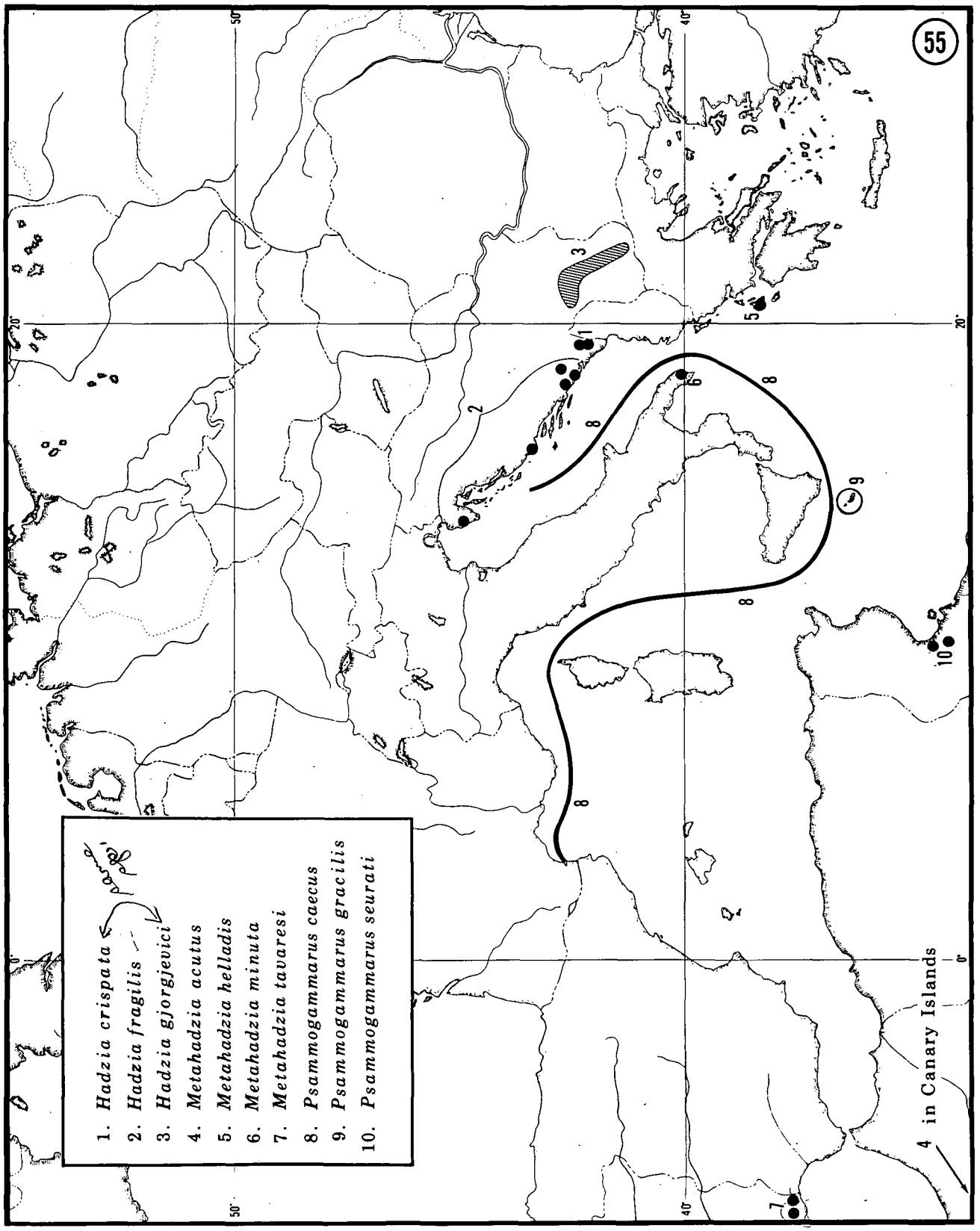
Map 52. Distribution of Anisogammarids and Kamaka in boreal Pacific. See text for species legends.



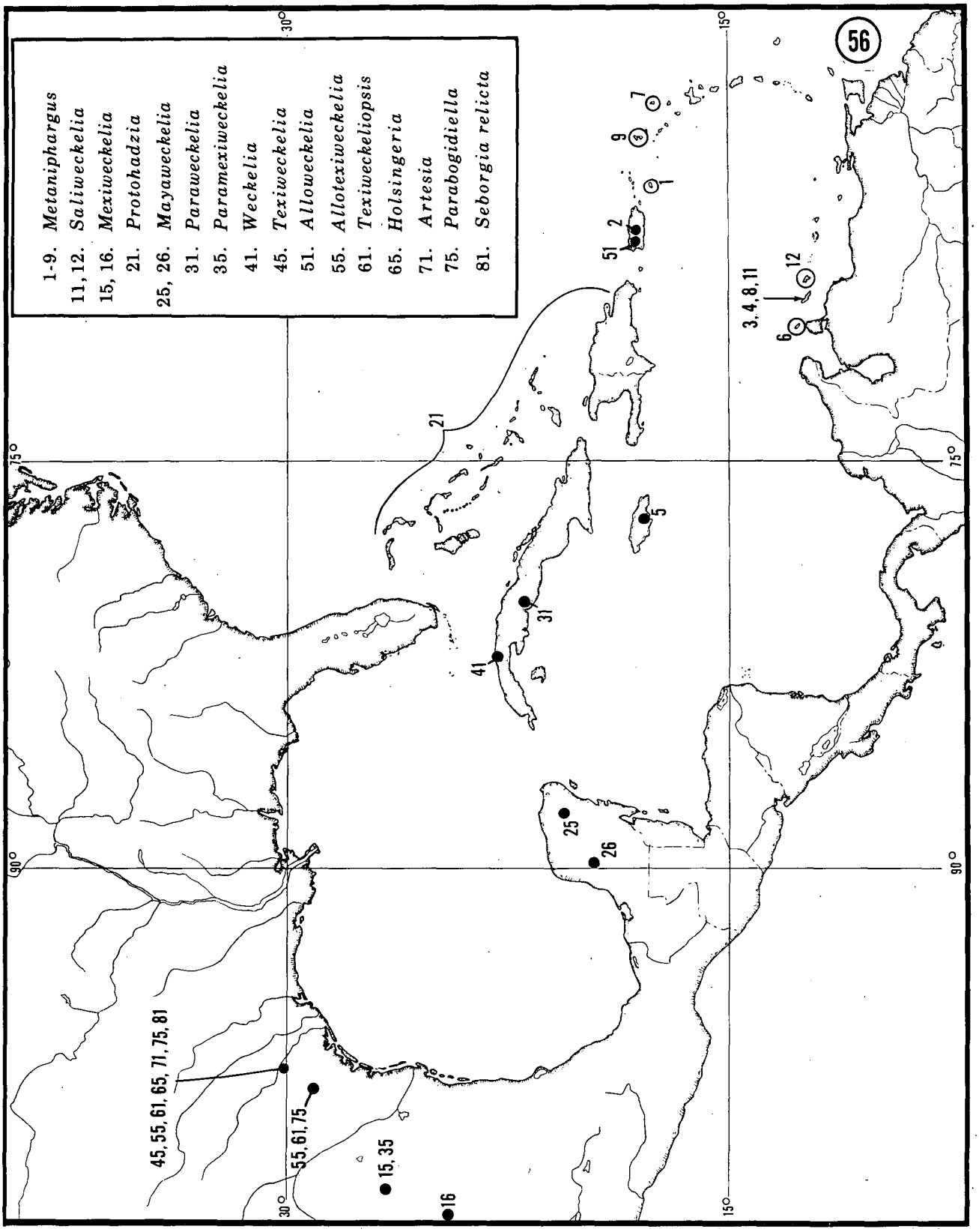
Map 53. Distribution of miscellaneous Pacific taxa. See legend for species.



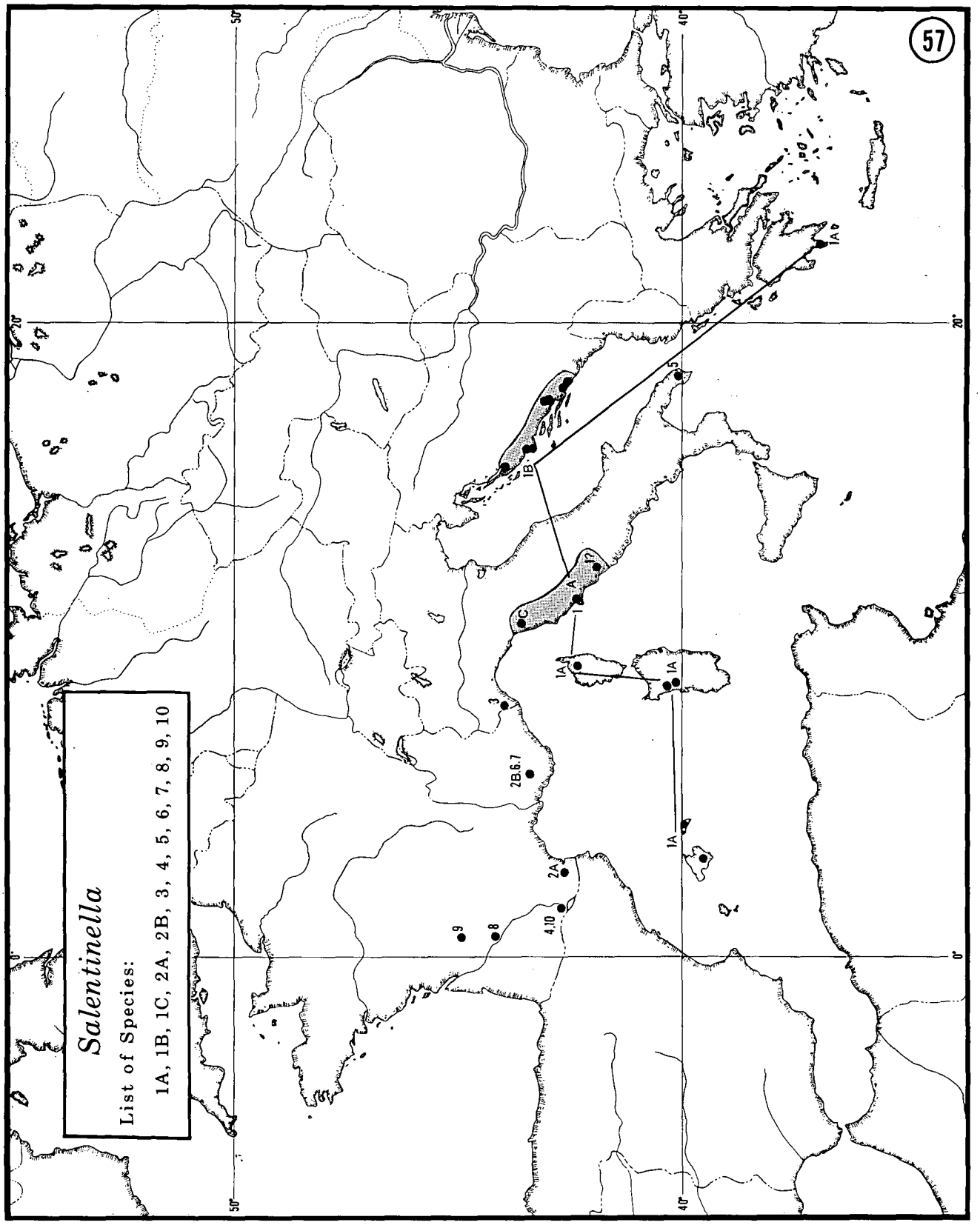
Map 54. Distribution of miscellaneous IndoPacific taxa. See legend for species.



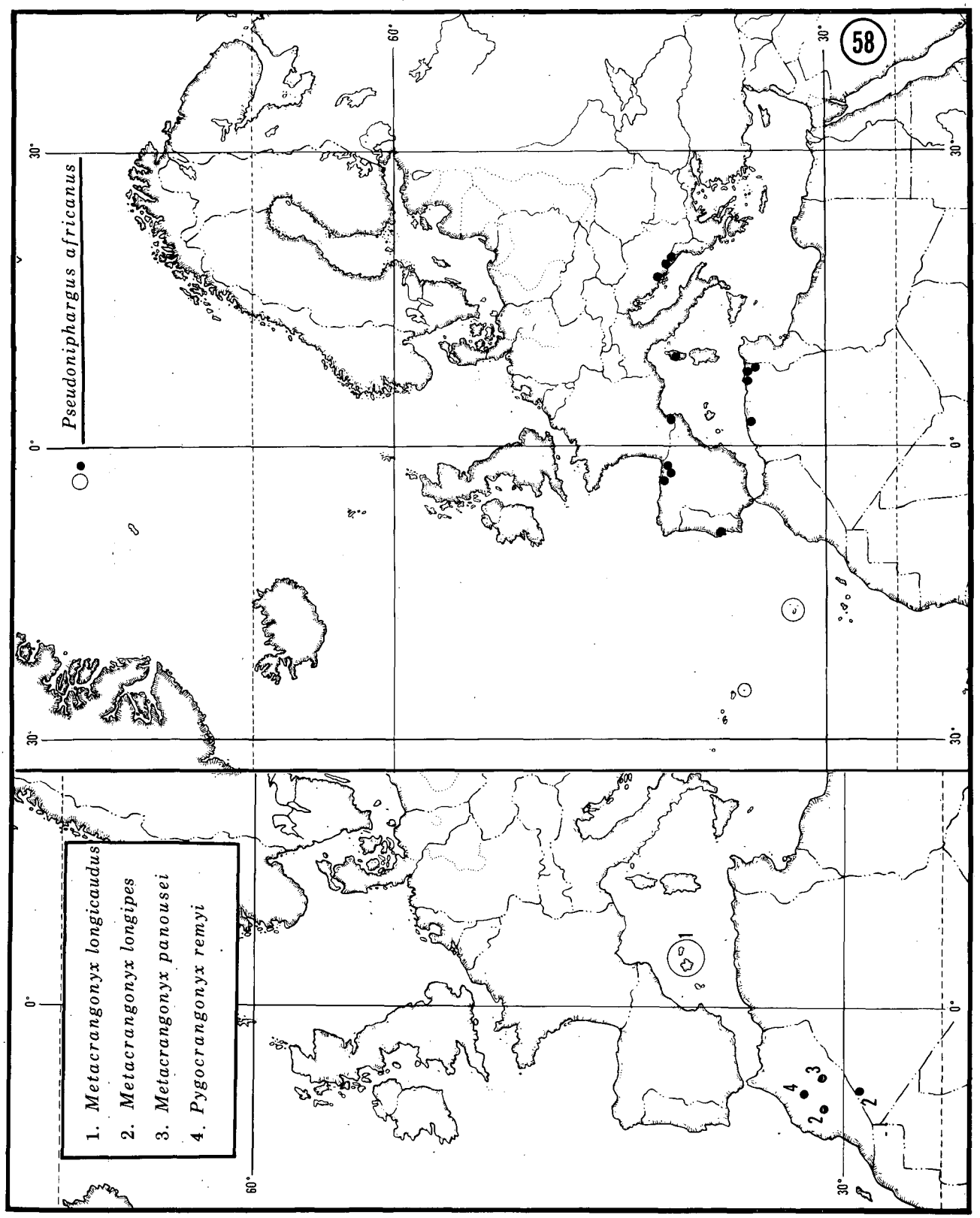
Map 55. Distribution of Hadzioids in Mediterranean region. See legend for species.



Map 56. Distribution of Hadziids and Weckeliids in Caribbean region. See legend for species.

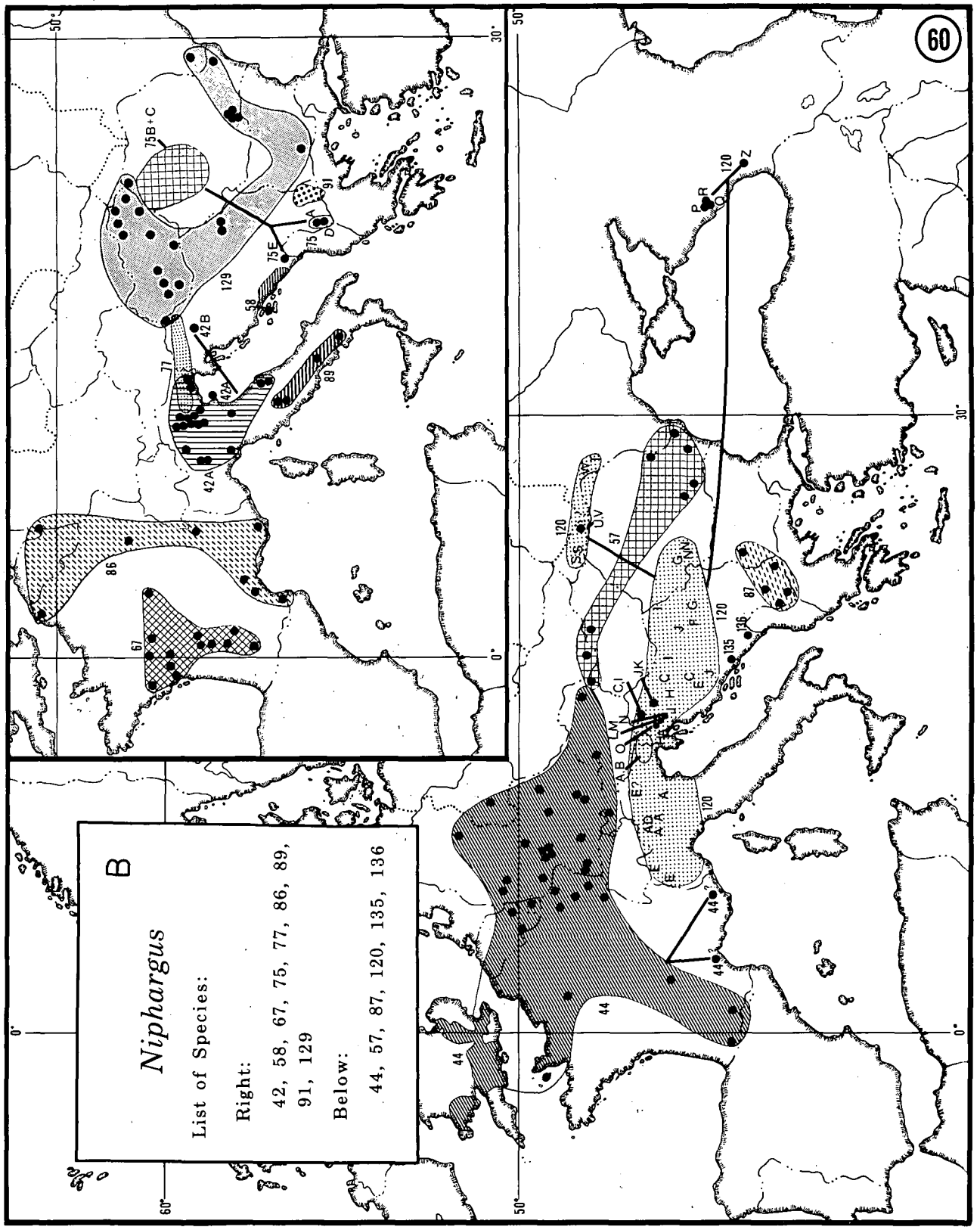


Map 57. Distribution of Salentinella in Mediterranean region. See text for species numbers.

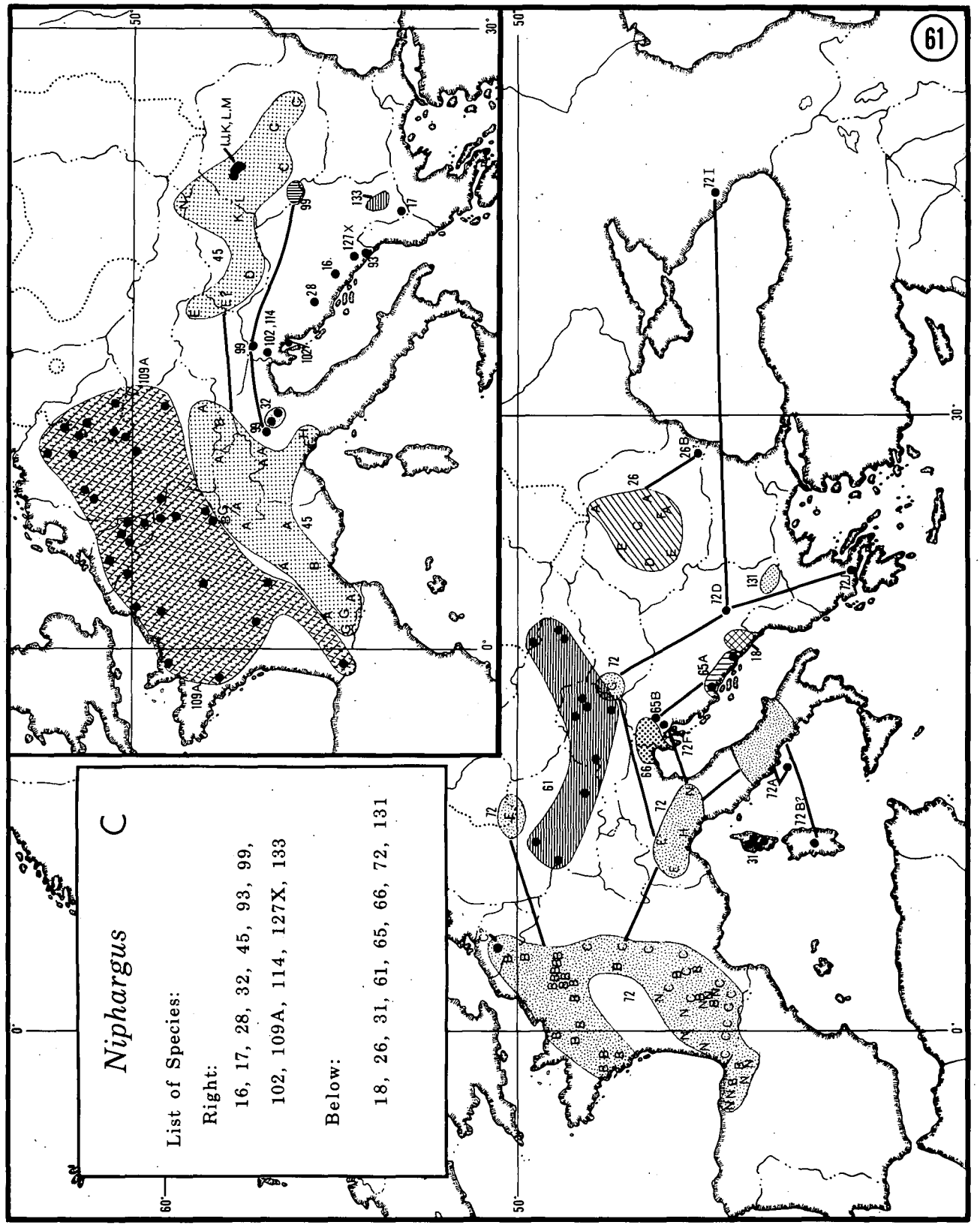


Map 58. Distribution of Metacrangonyxes and Pseudoniphargus in the Mediterranean region. See text for species numbers.

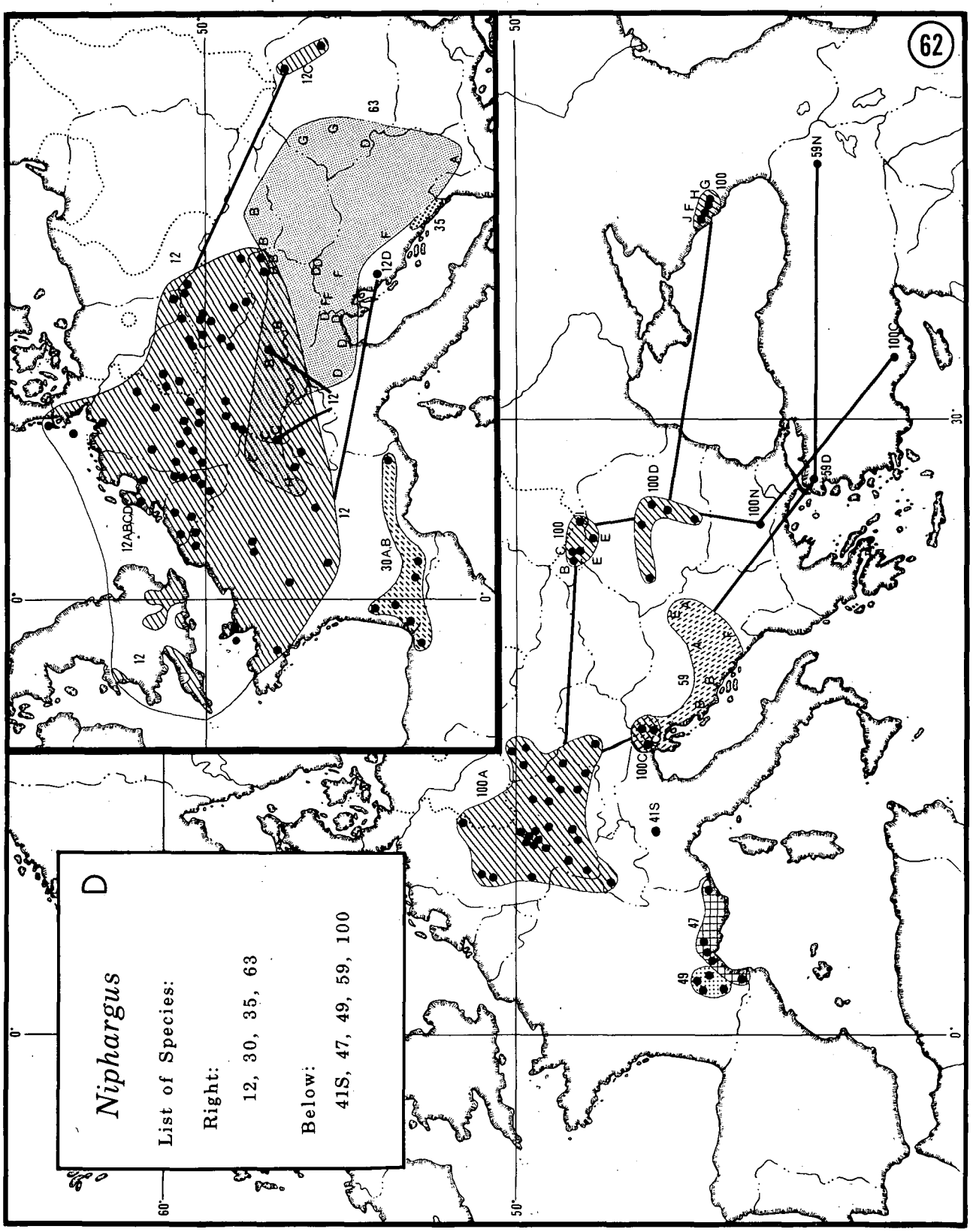
Map 59. Distribution of Niphargus in west Palearctica. See text for species numbers. Most species from unique localities.



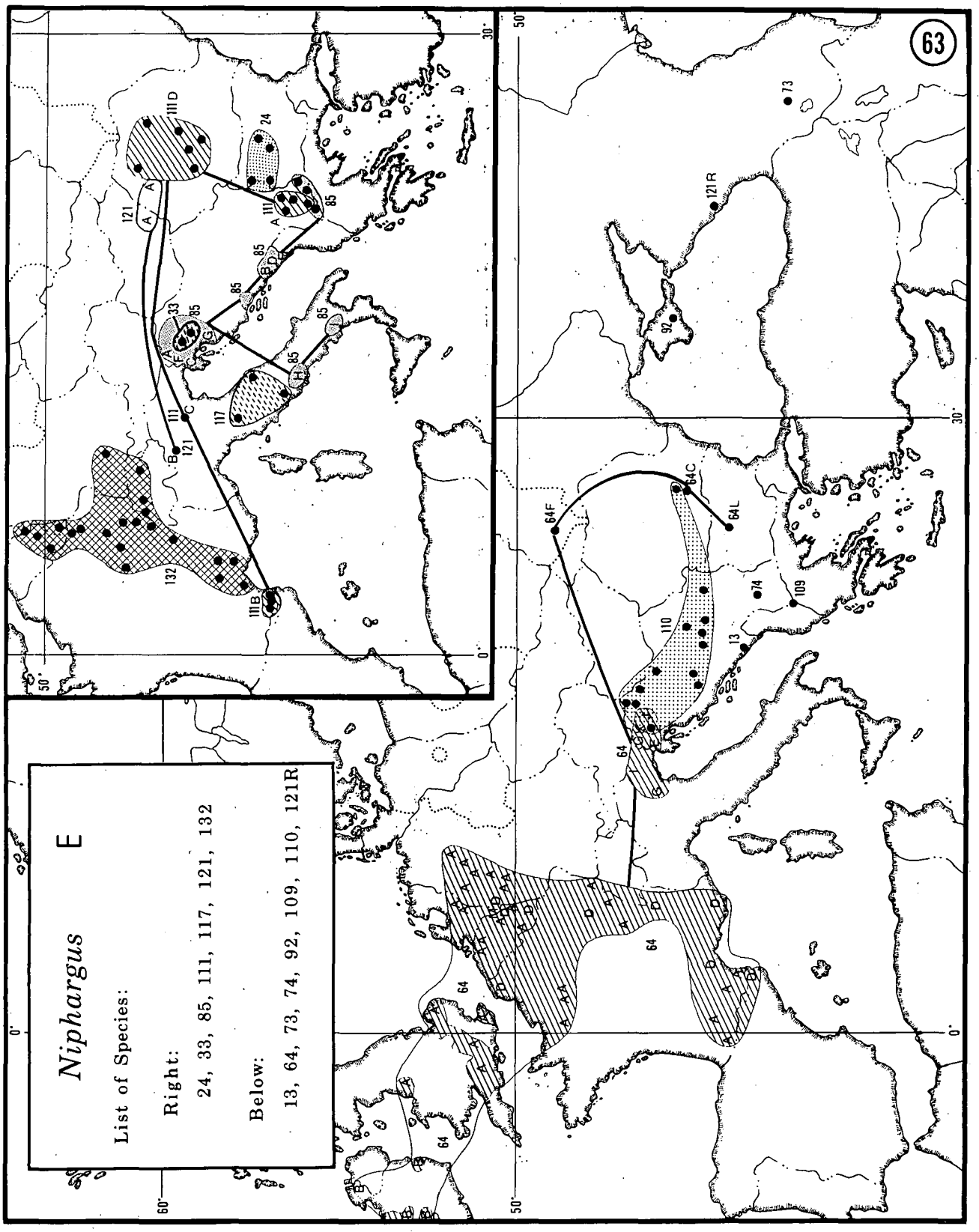
Map 60. Distribution of Niphargus in west Palearctica. See text for species numbers. Major species = fontanus 44, pachypus 86, stygius 120 and valachicus 129.



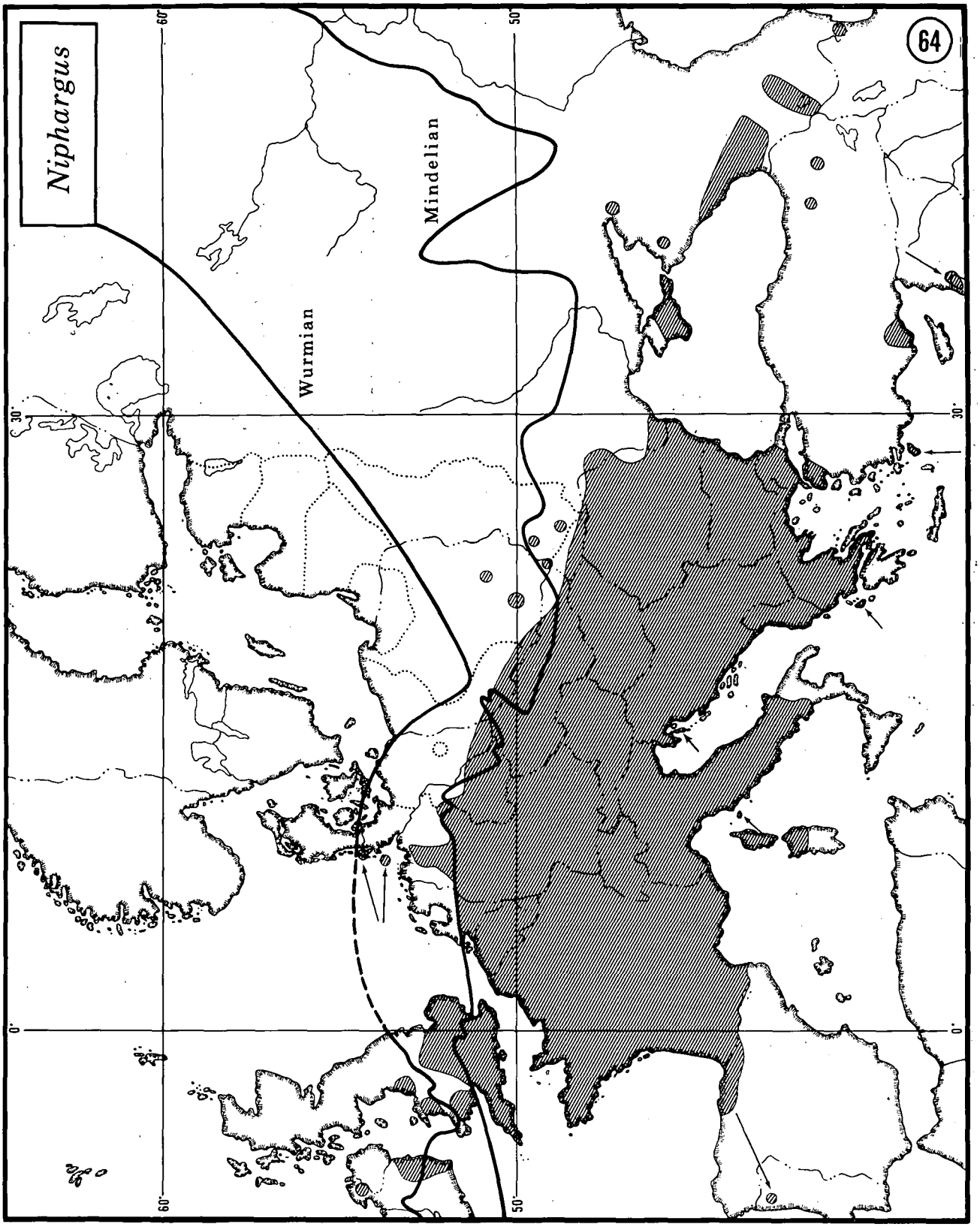
Map 61. Distribution of Niphargus in west Palearctica. See text for species numbers. Major species = foreli 45, inopinatus 61, longicaudatus 72, and schellenbergi 109A.



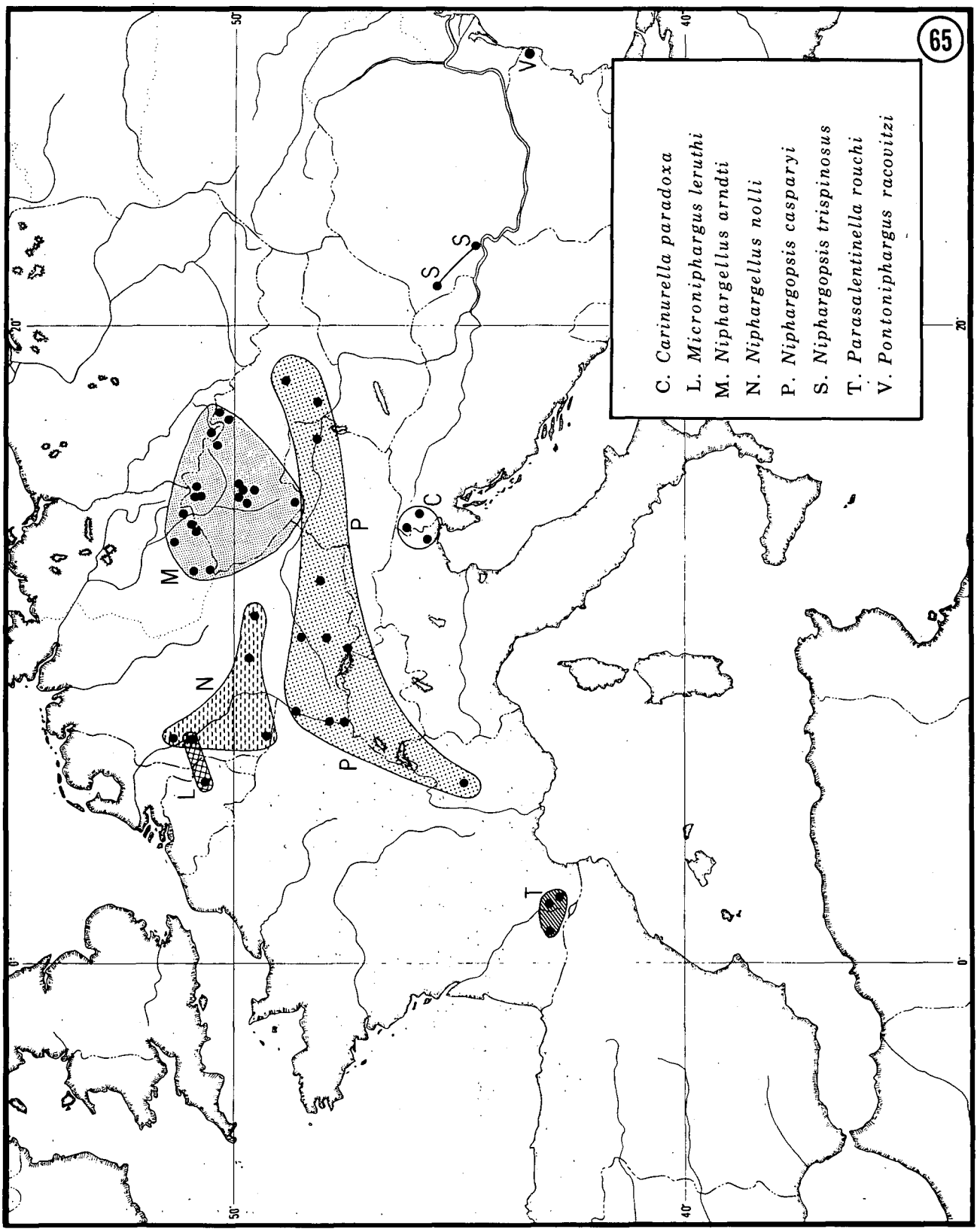
Map 62. Distribution of Niphargus in west Palearctica. See text for species numbers. Major species = aquilex 12, illidzensis 59, jovanovici 63 and puteanus 100.



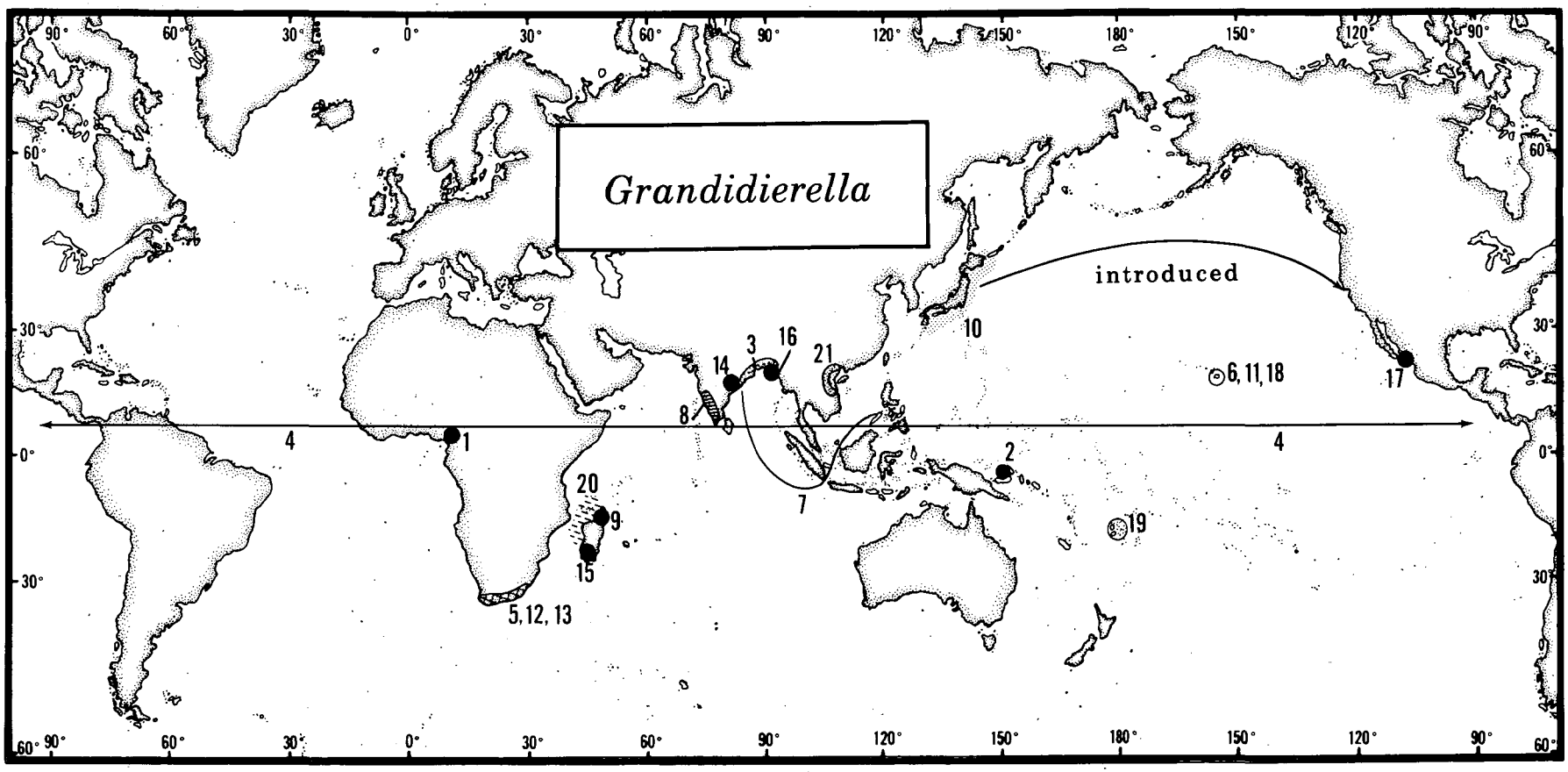
Map 63. Distribution of Niphargus in west Palearctica. See text for species numbers. Major species = kochianus 64, serbicus 110, skopljensis 111, virei 132.



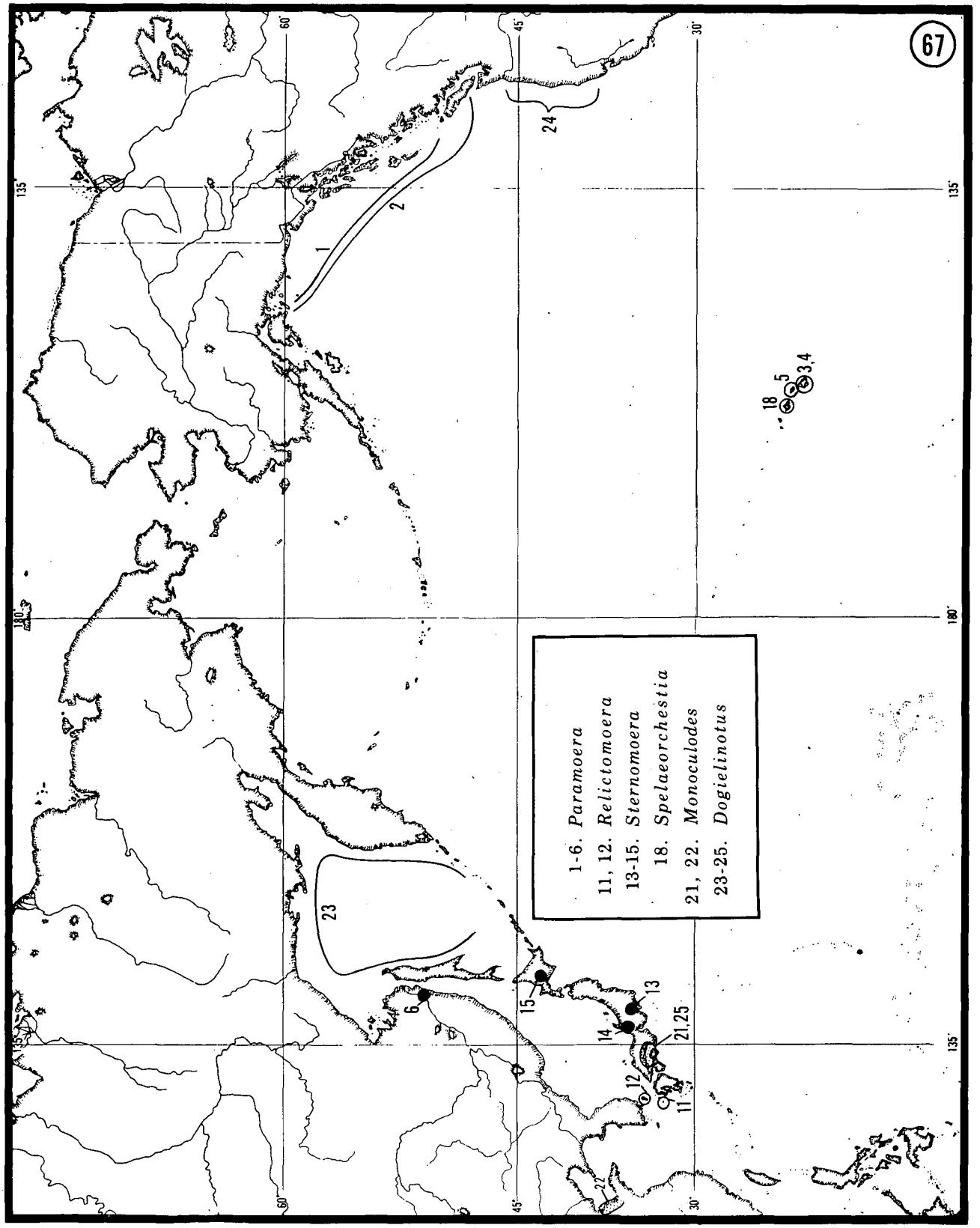
Map 64. Joint distribution of all species of Niphargus in west Palearctica in relation to two advances of glaciation. X = Haploginglymus, often considered synonym of Niphargus.



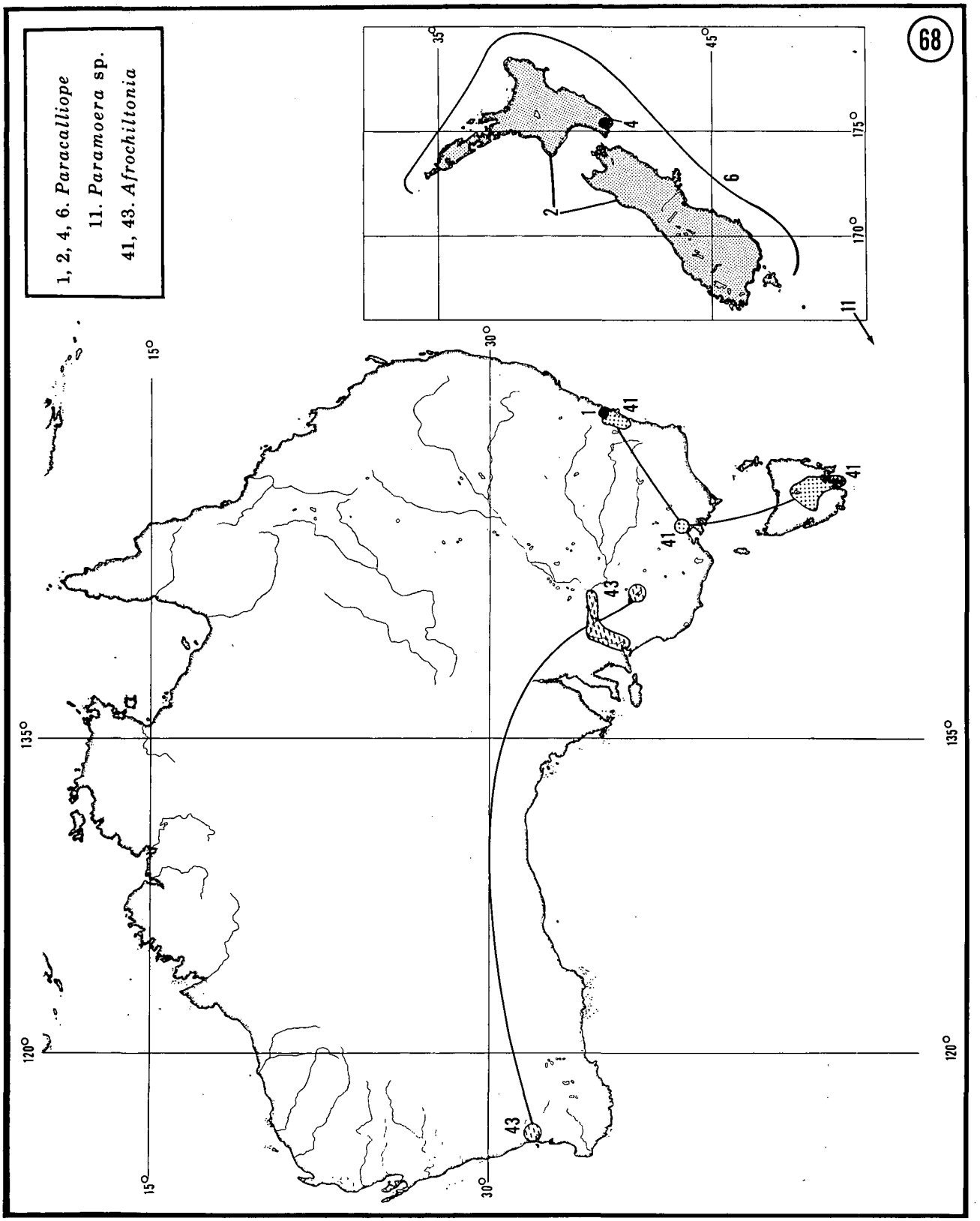
Map 65. Distribution of other taxa of Niphargids in west Palearctica. See legend for species.



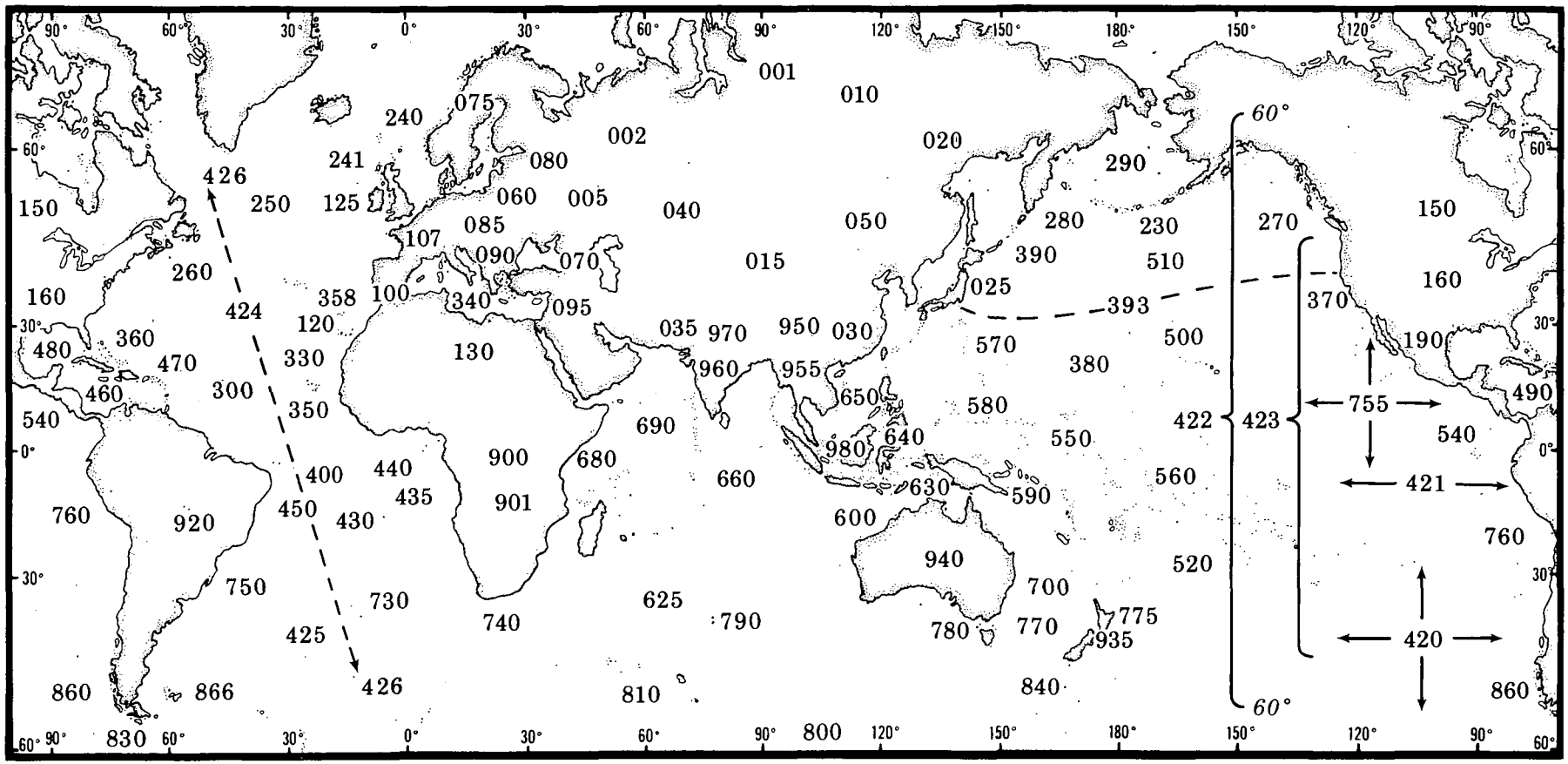
Map 66. Distribution of Grandidierella in the world. See text for species numbers.



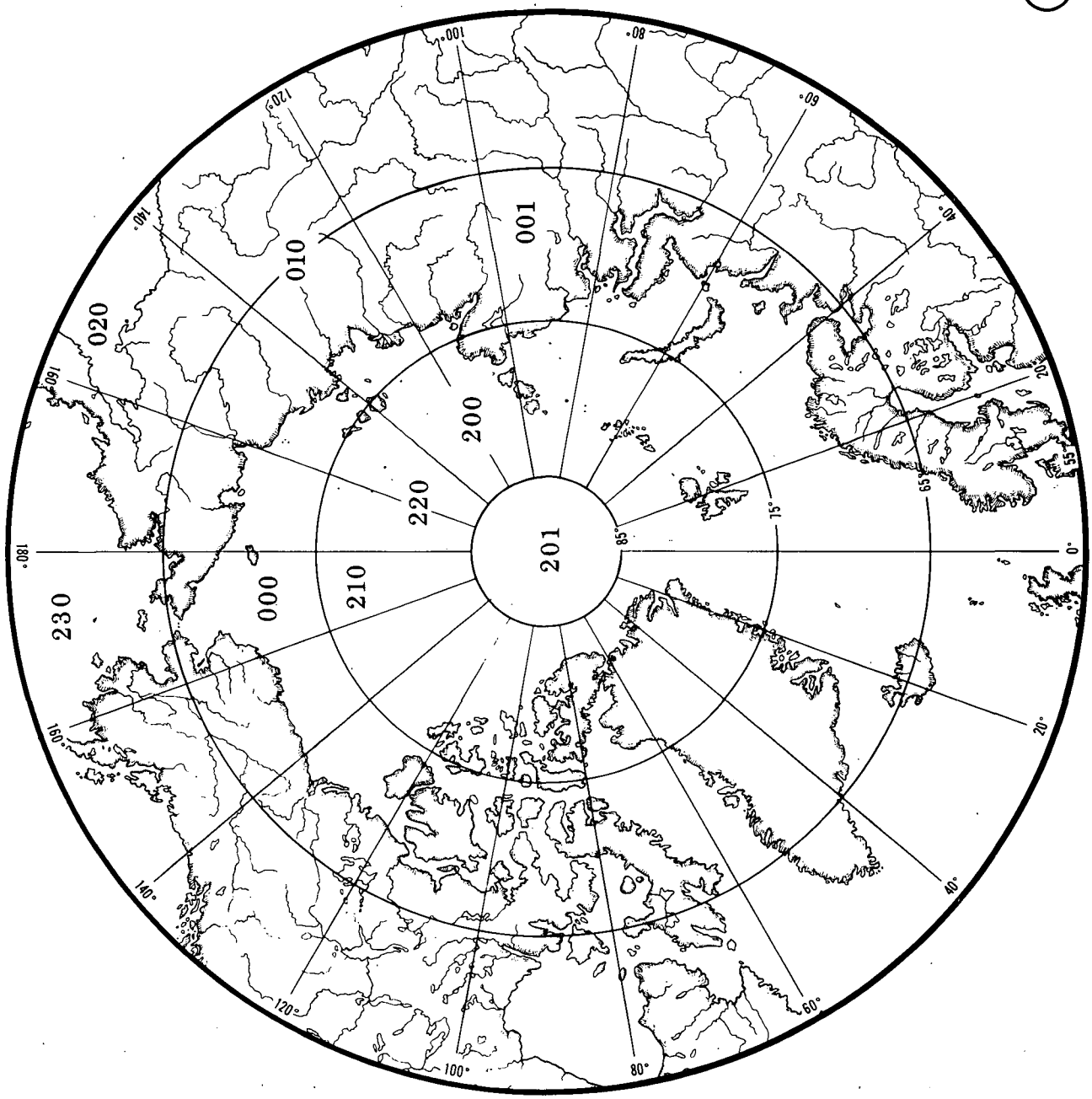
Map 67. Distribution of miscellaneous taxa in boreal Pacific. See legend for species.



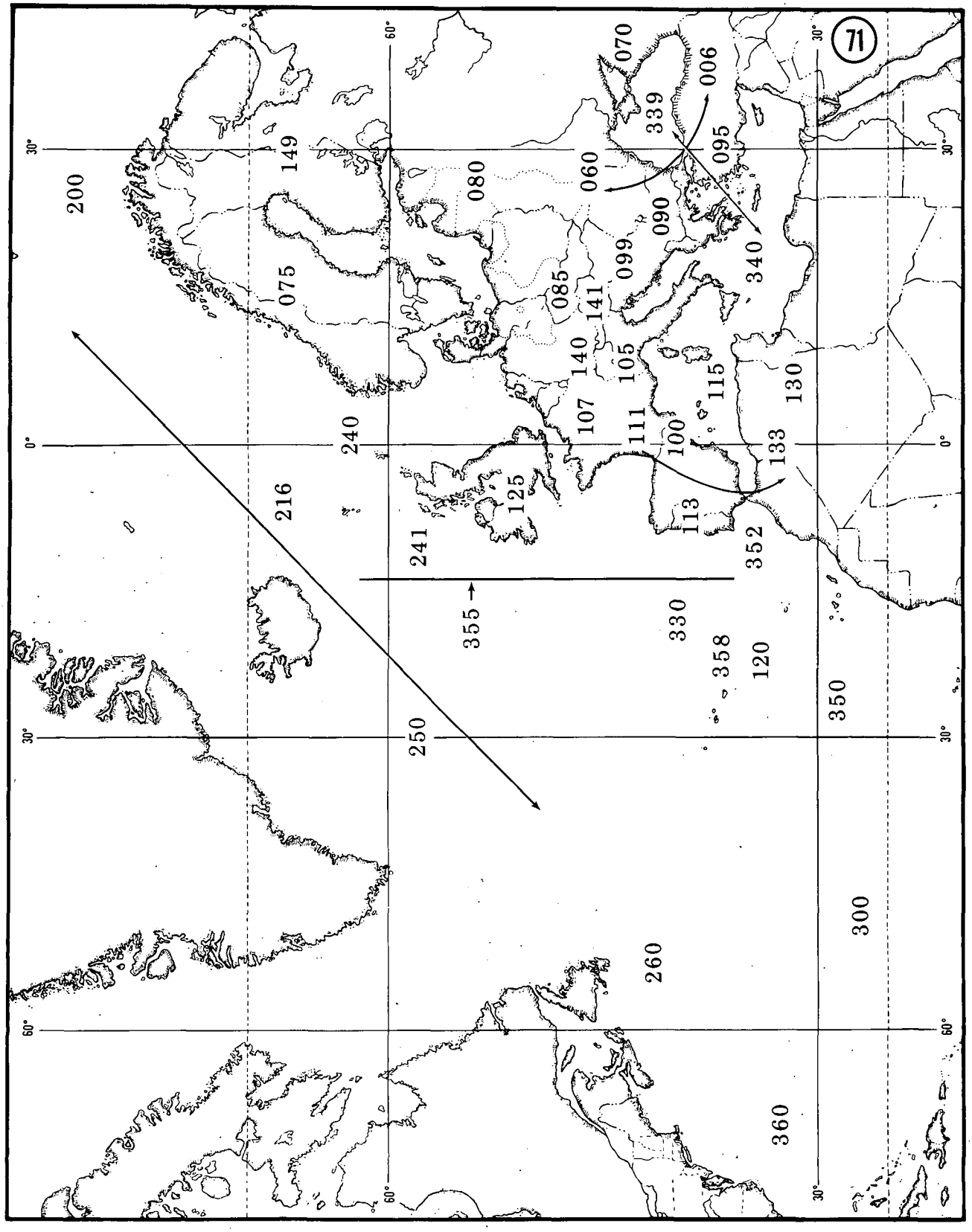
Map 68. Distribution of miscellaneous taxa in Australasia. See legend for species.



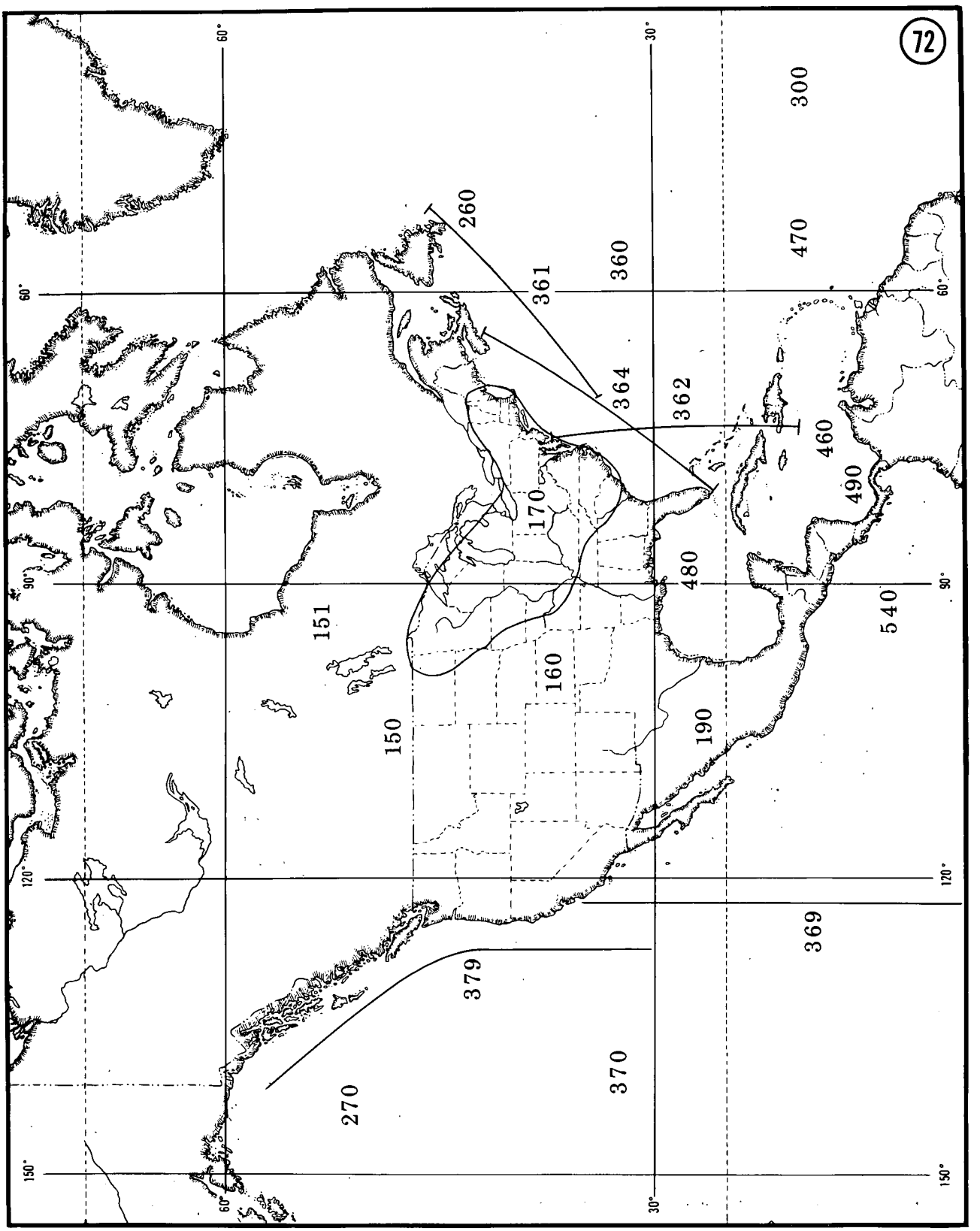
Map 69. General world zones, whole world.



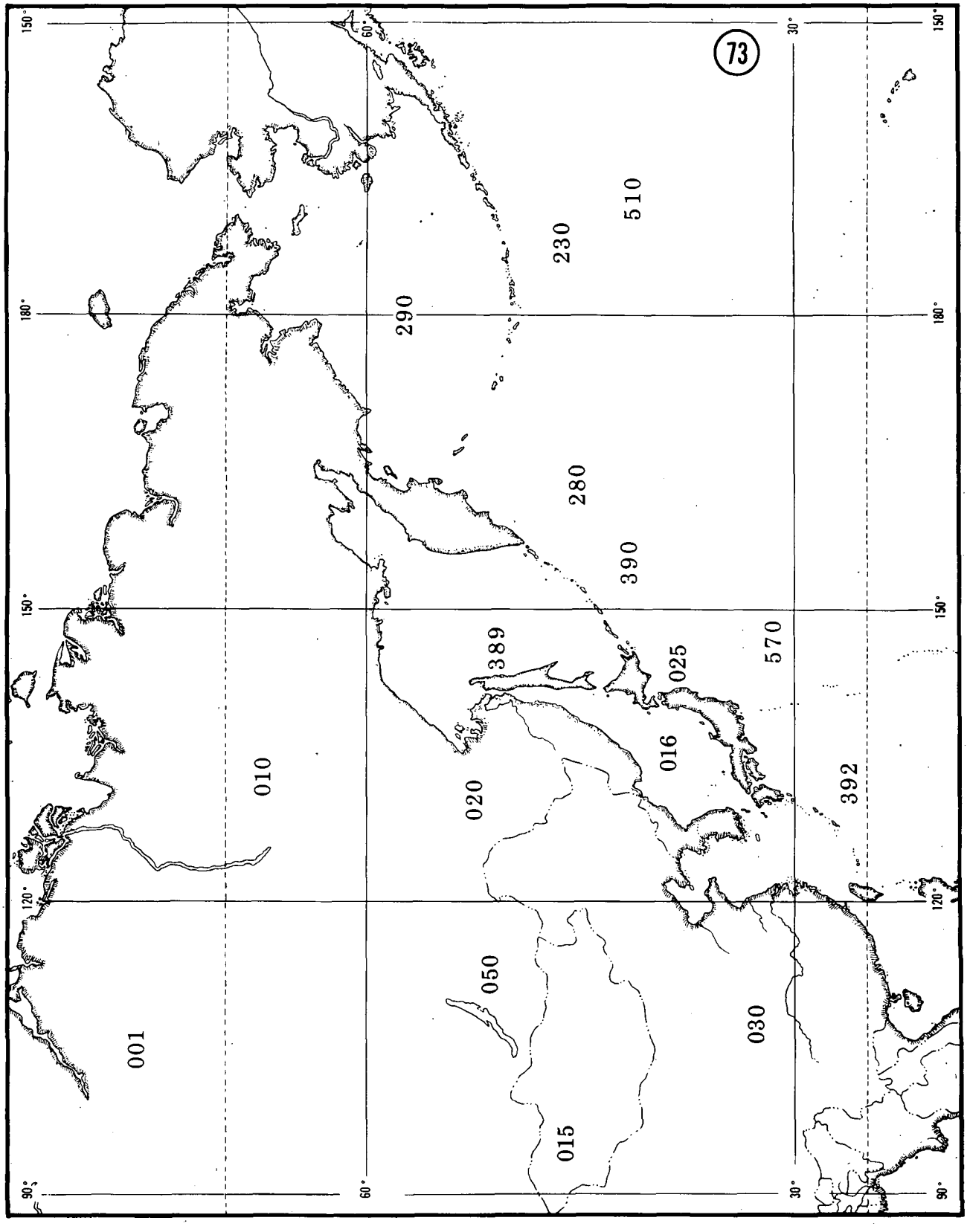
Map 70. General world zones, north polar region.



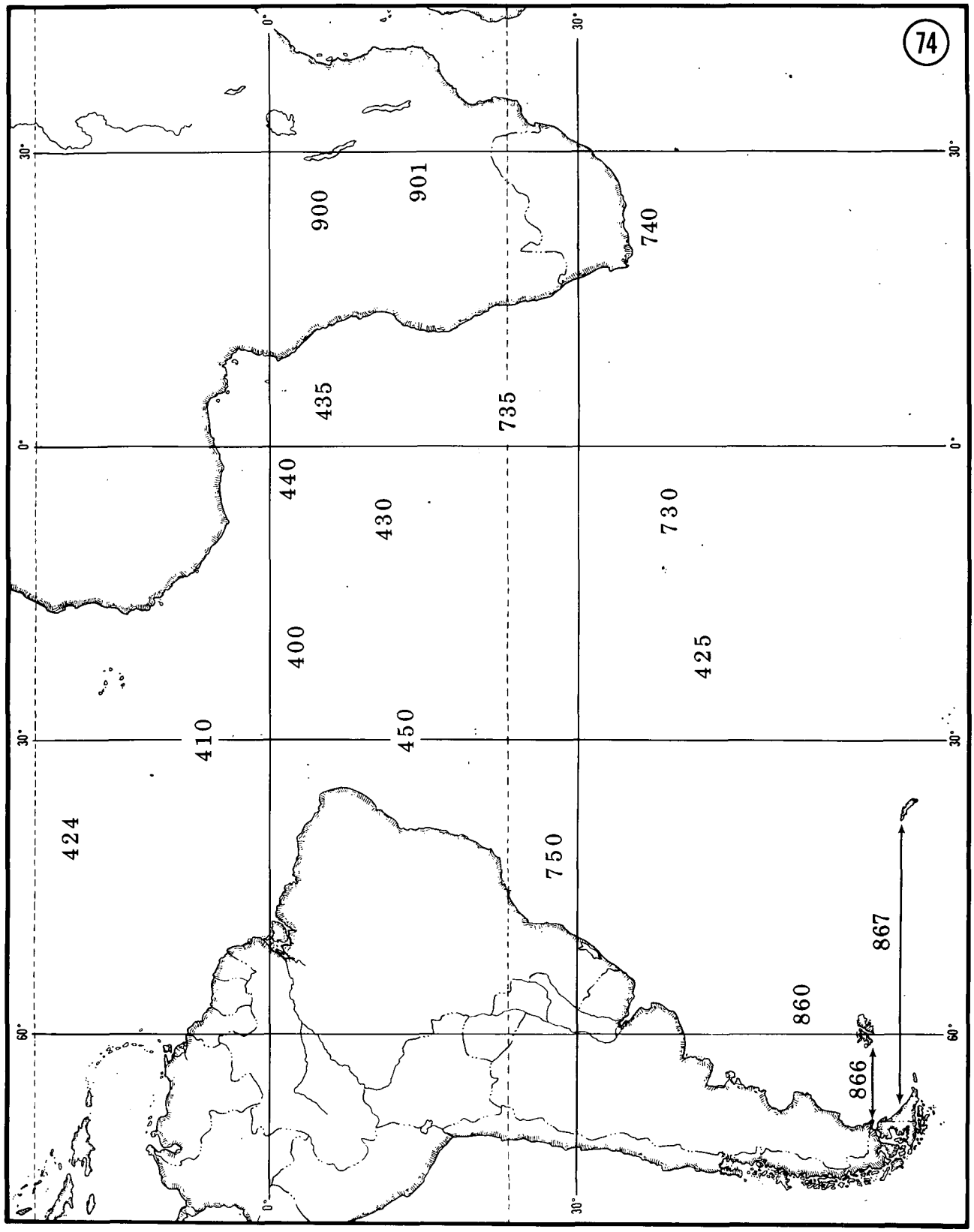
Map 71. General world zones, North Atlantic region.



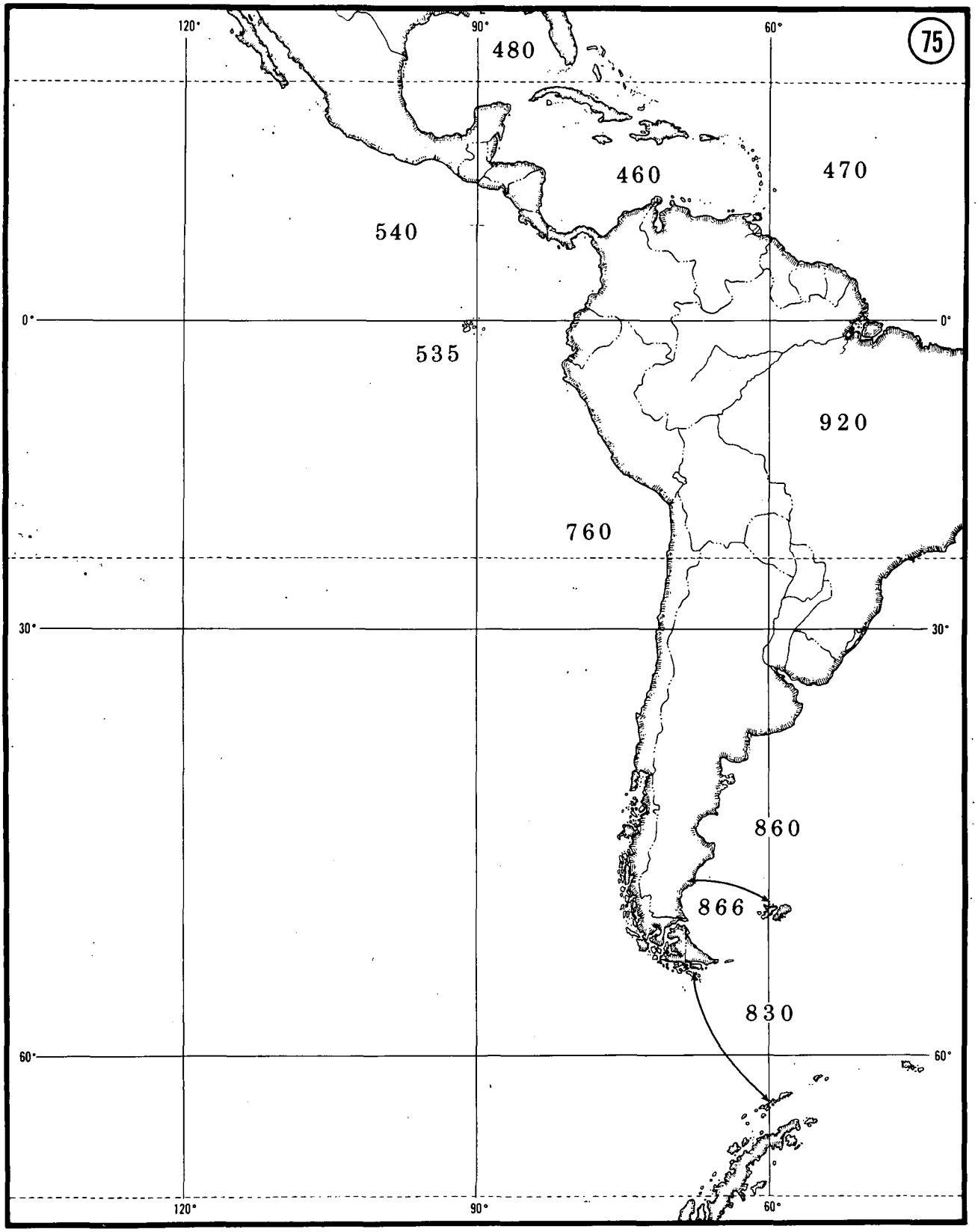
Map 72. General world zones, North American region.



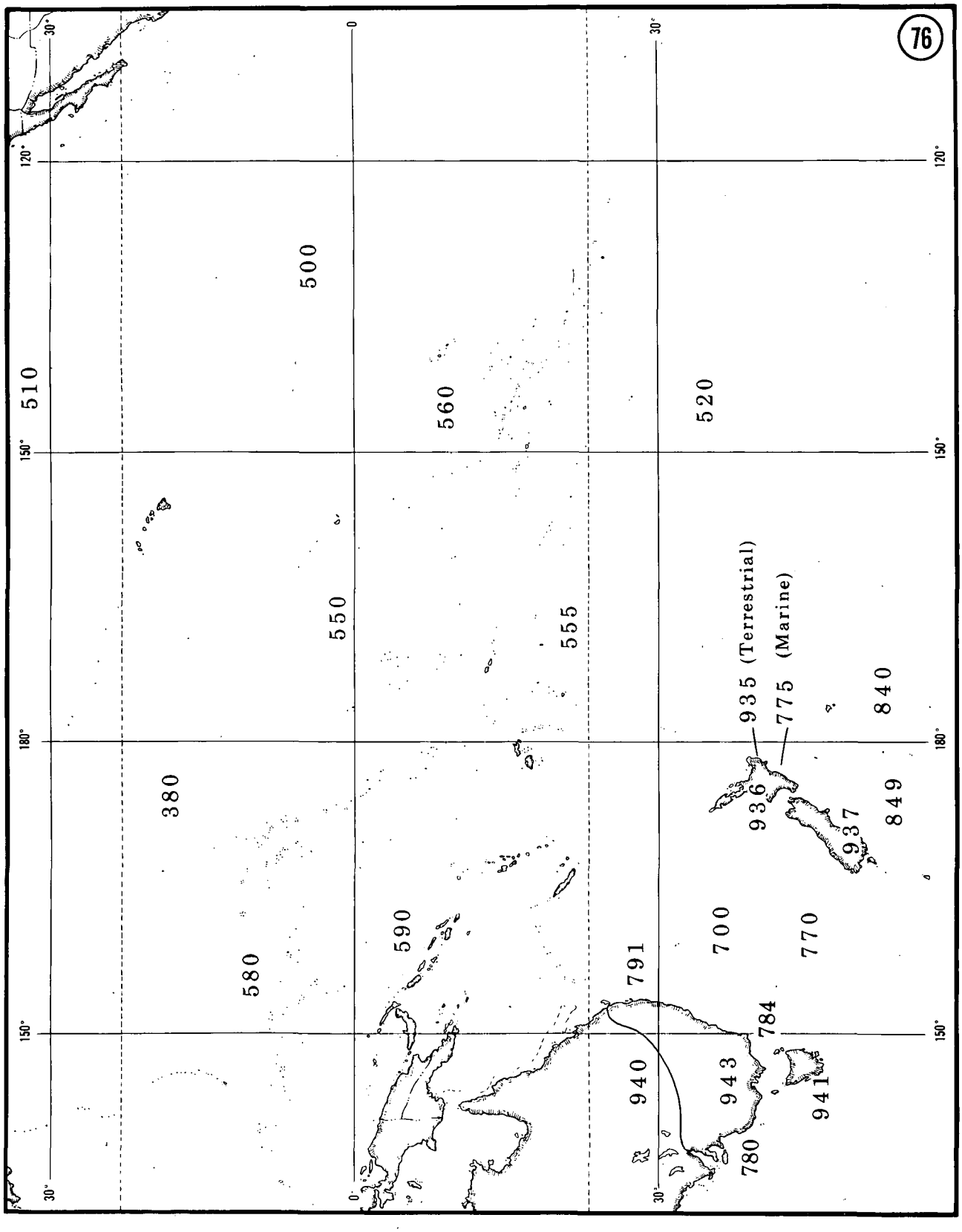
Map 73. General world zones, Northeast Asian region.



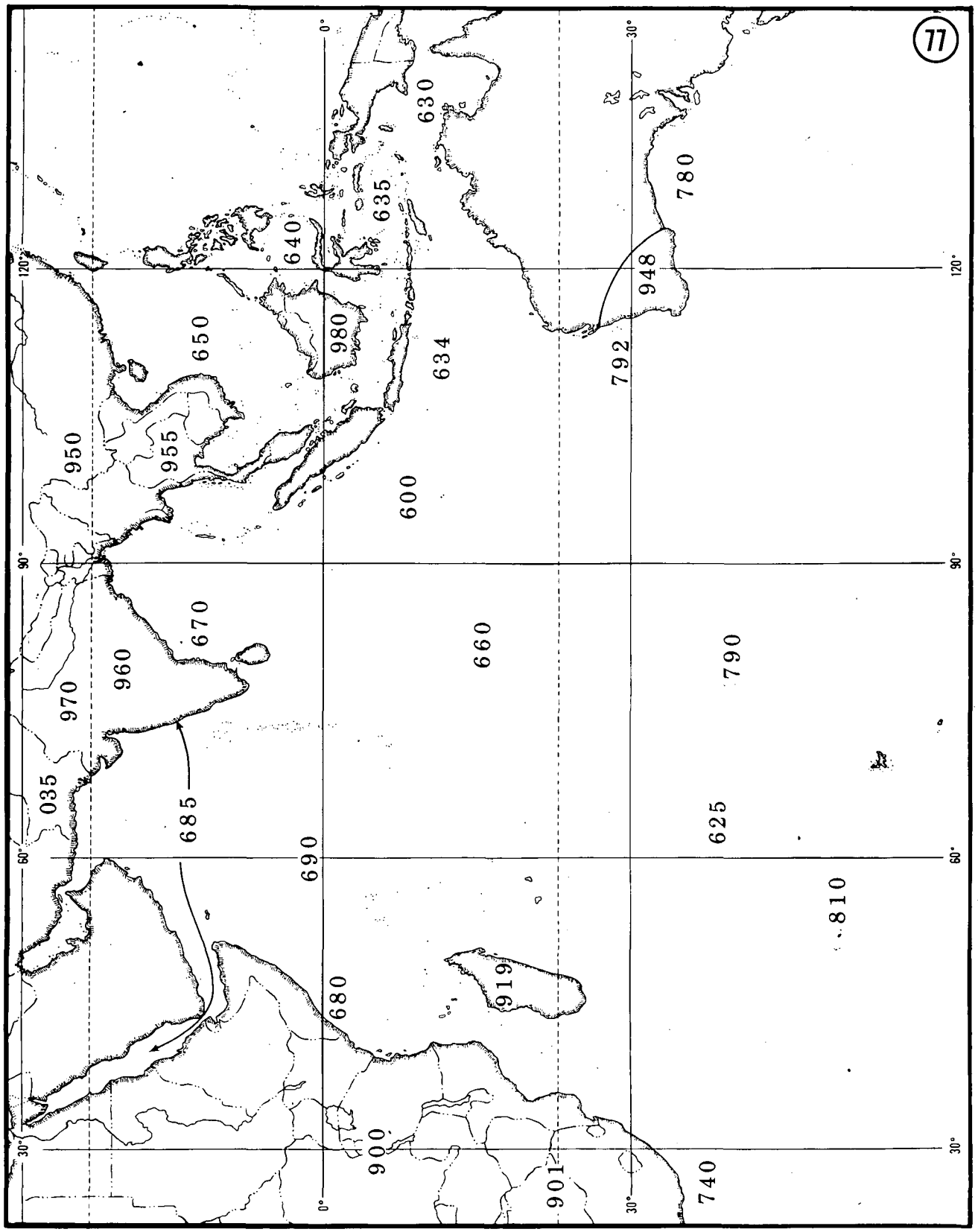
Map 74. General world zones, Tropical Atlantic region.



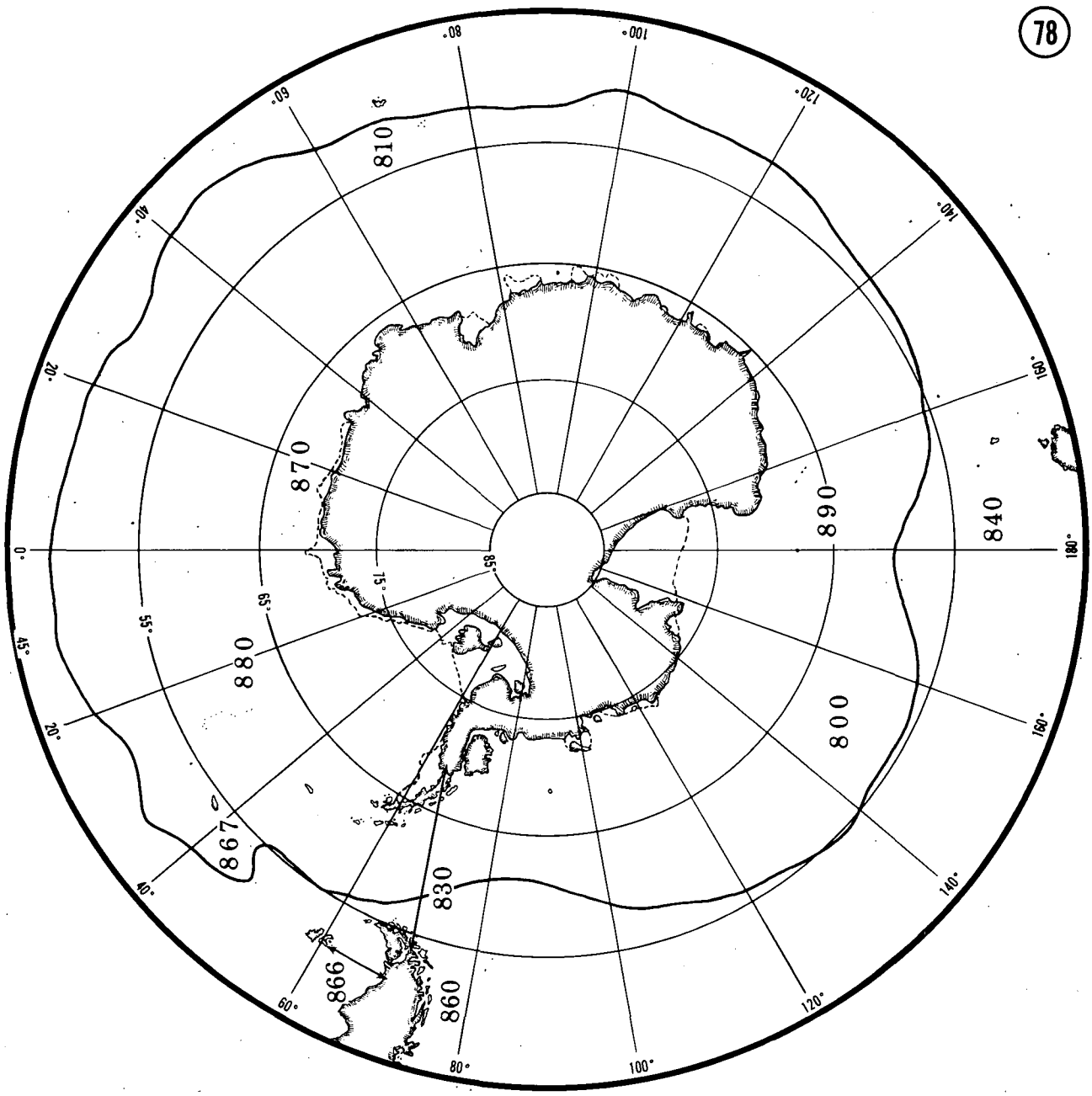
Map 75. General world zones, southeast Pacific region.



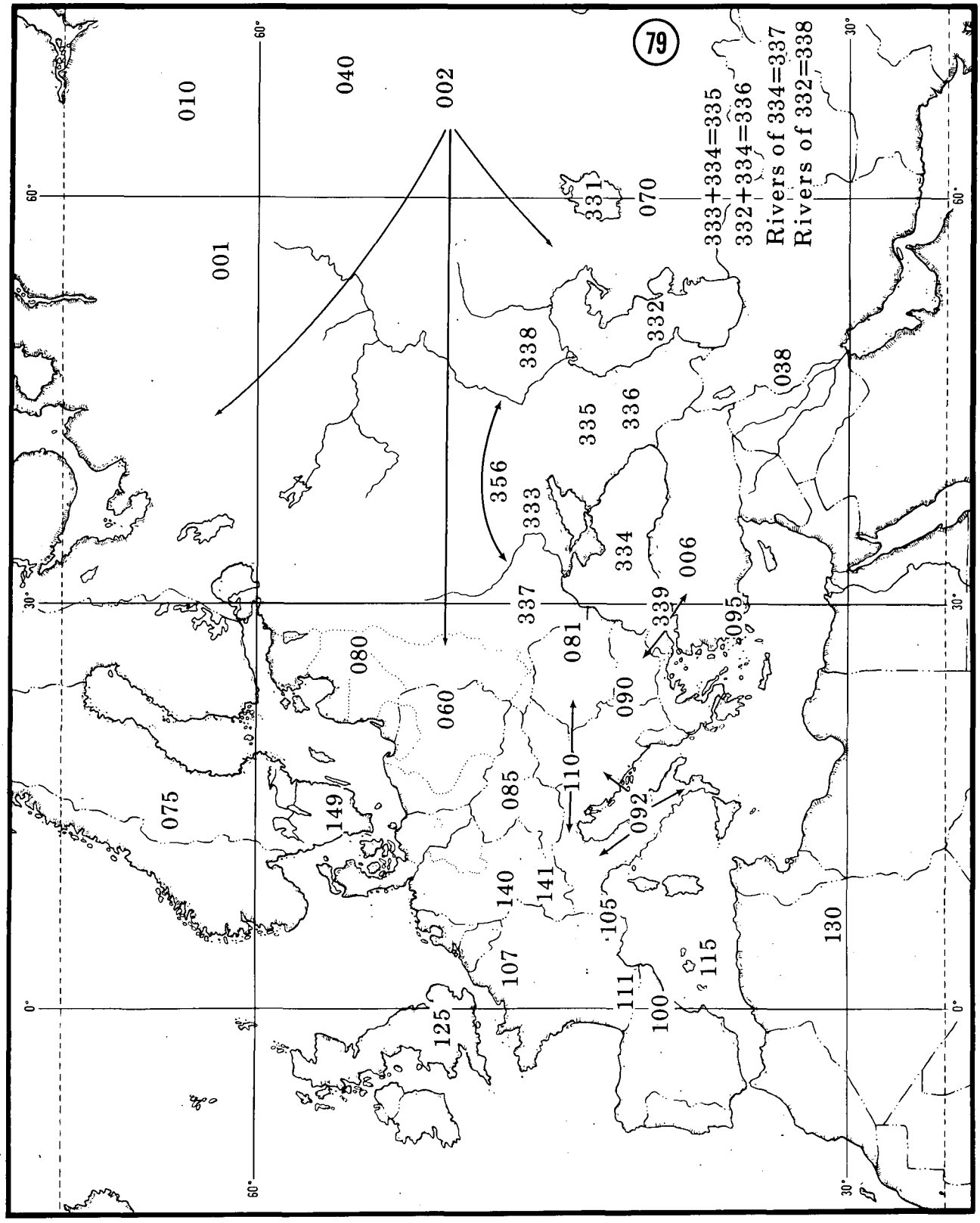
Map 76. General world zones, South Pacific region.



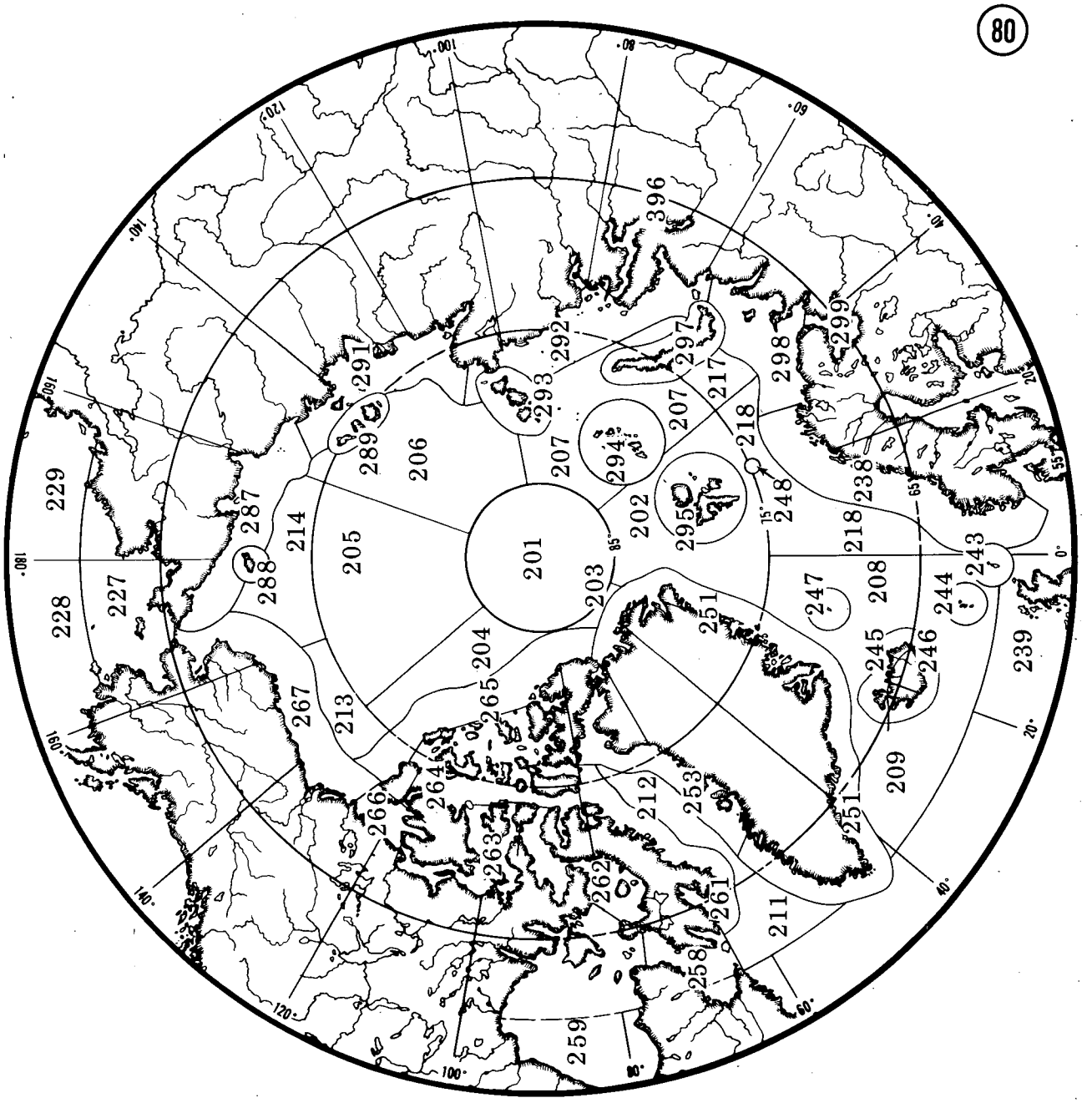
Map 77. General world zones, Indian region.



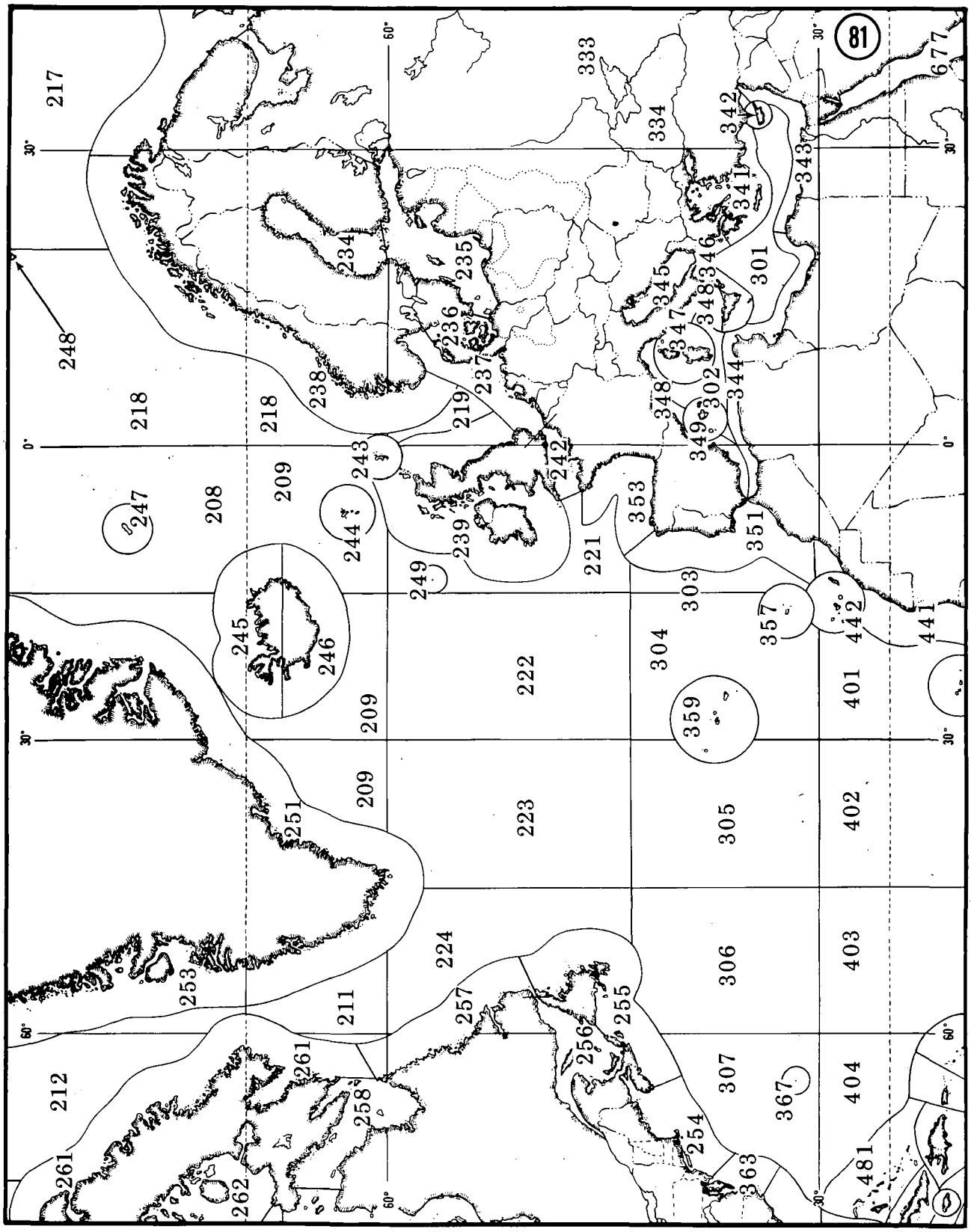
Map 78. General world zones, south polar region.



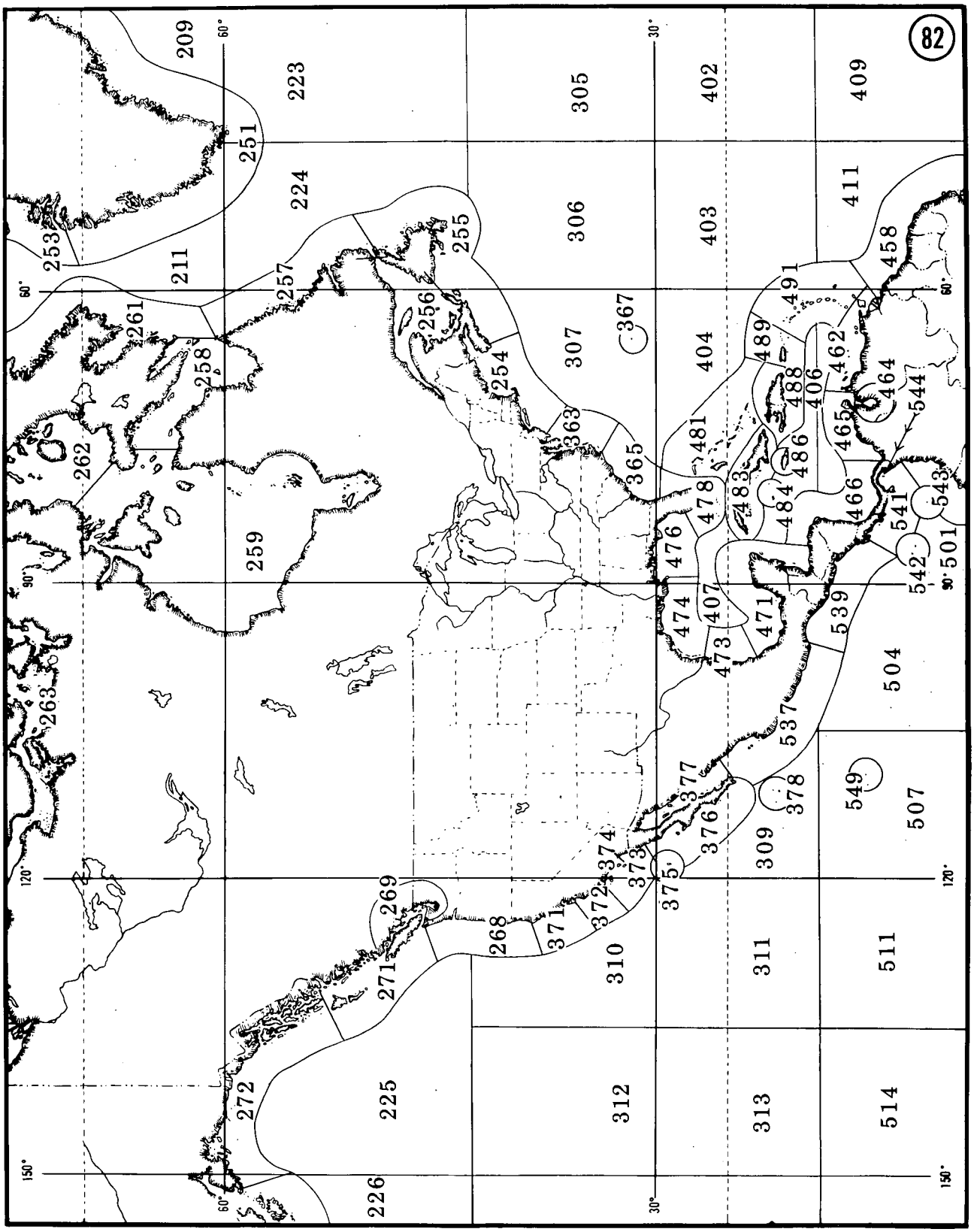
Map 79. General world zones, west Palearctica.



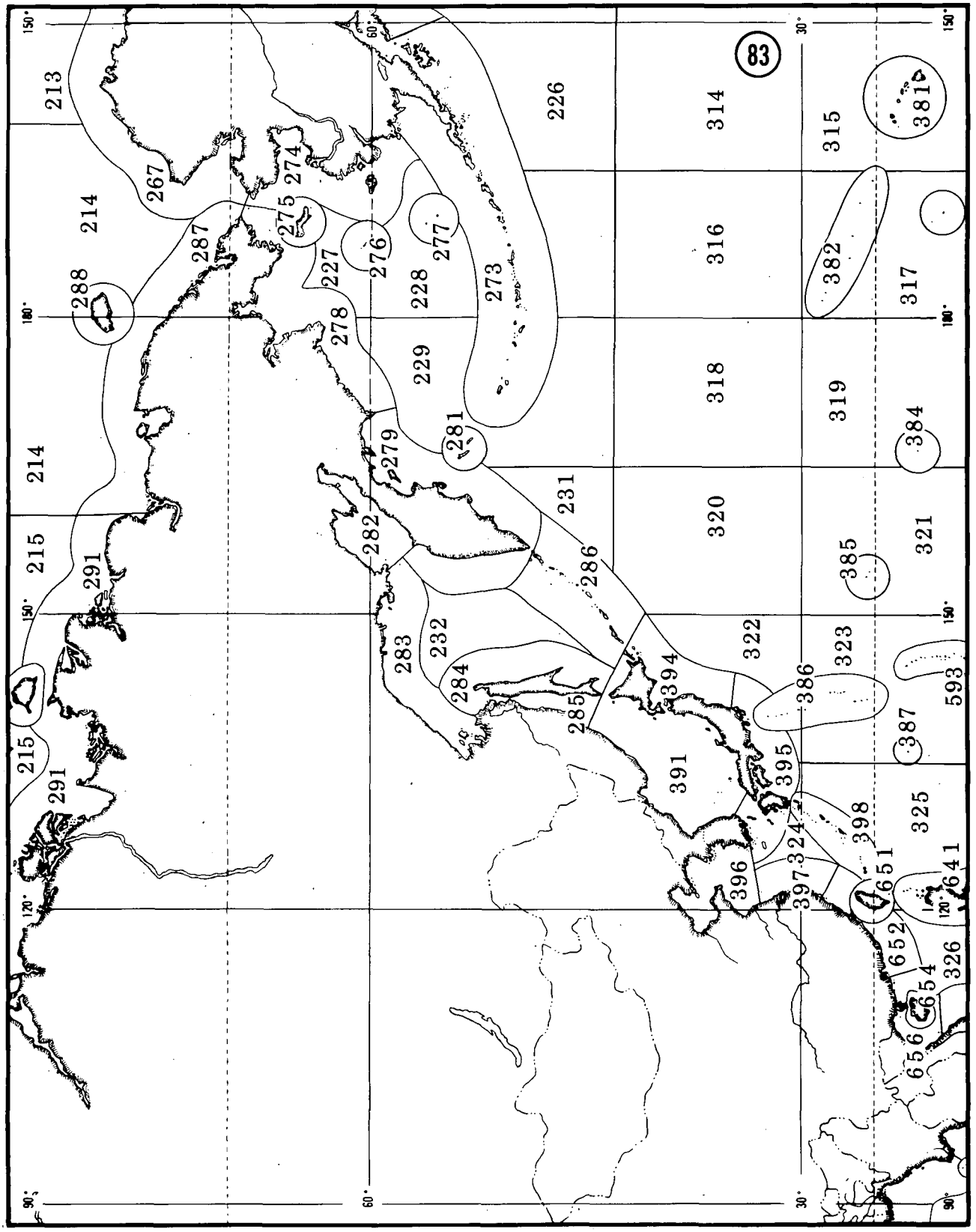
Map 80. Specific zones, north polar region.



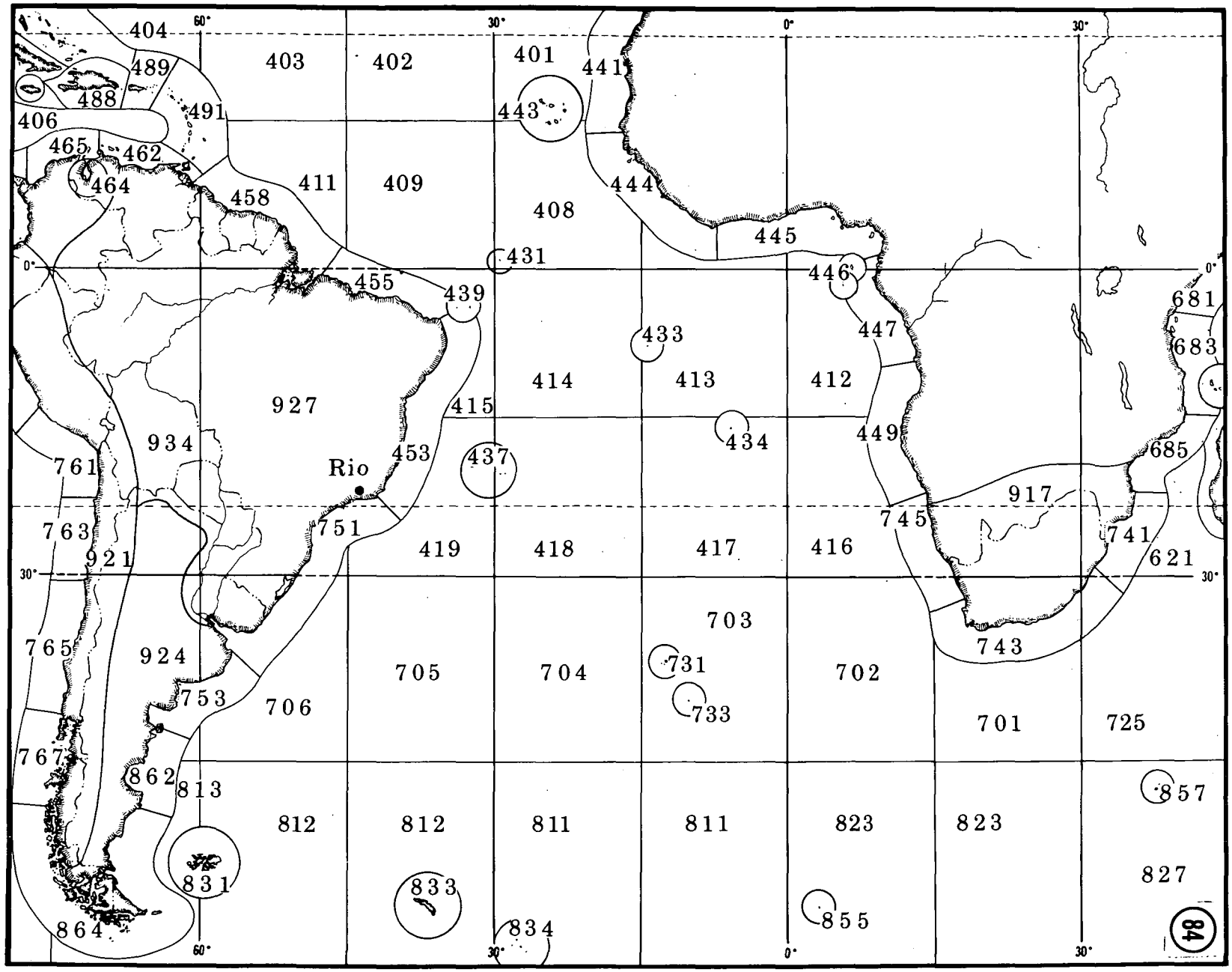
Map 81. Specific zones, North Atlantic region.



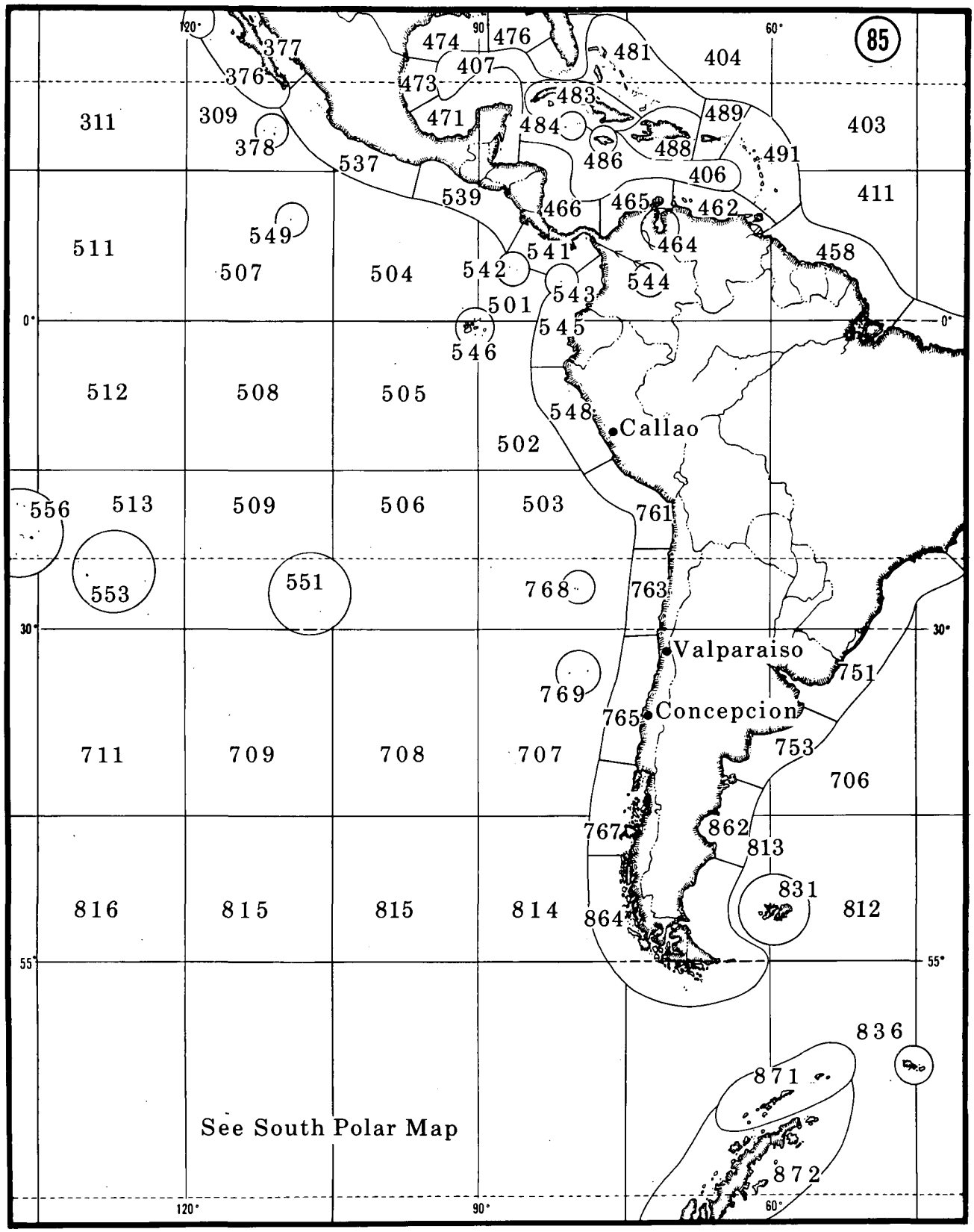
Map 82. Specific zones, North American region.



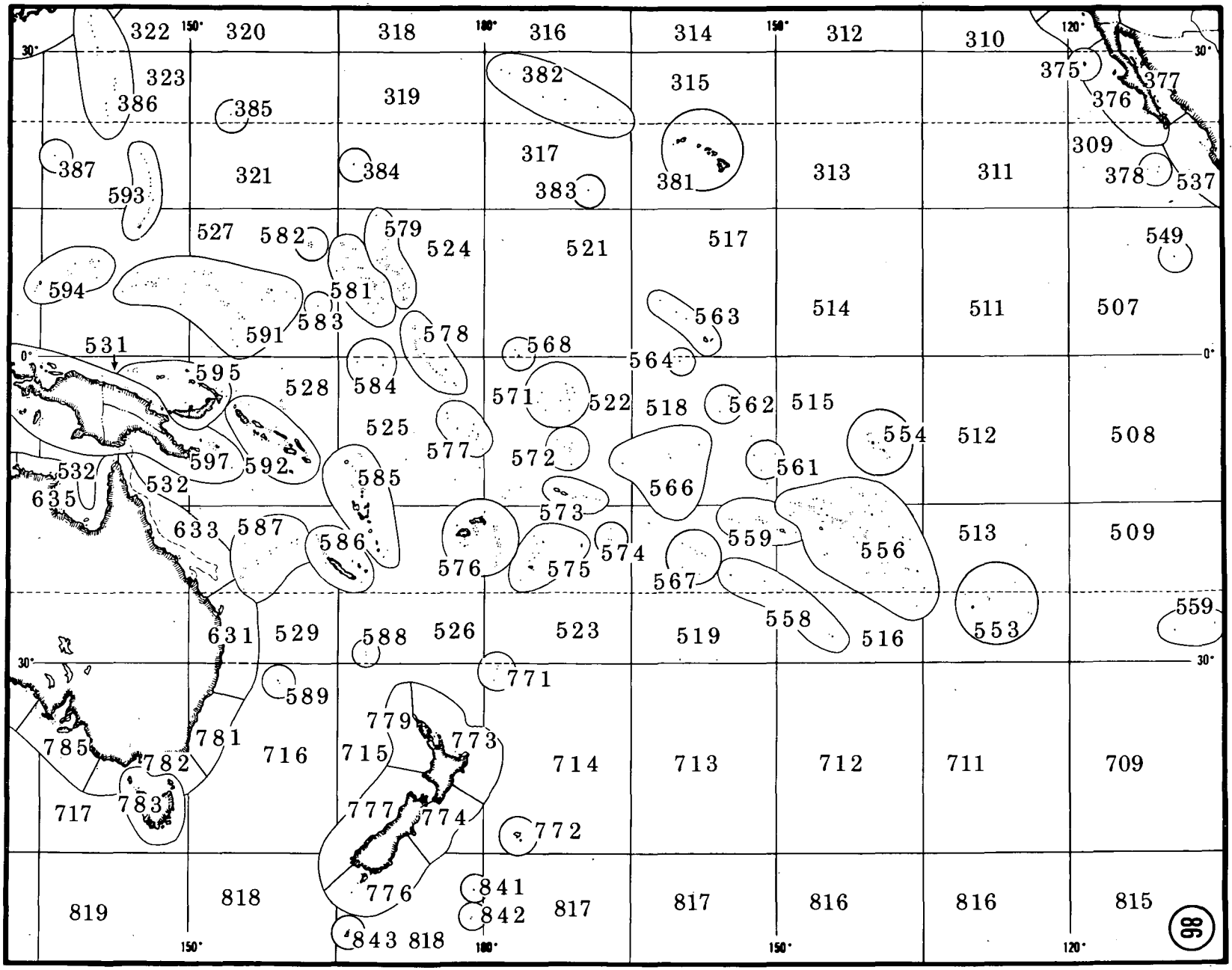
Map 83. Specific zones, northeast Asian region.



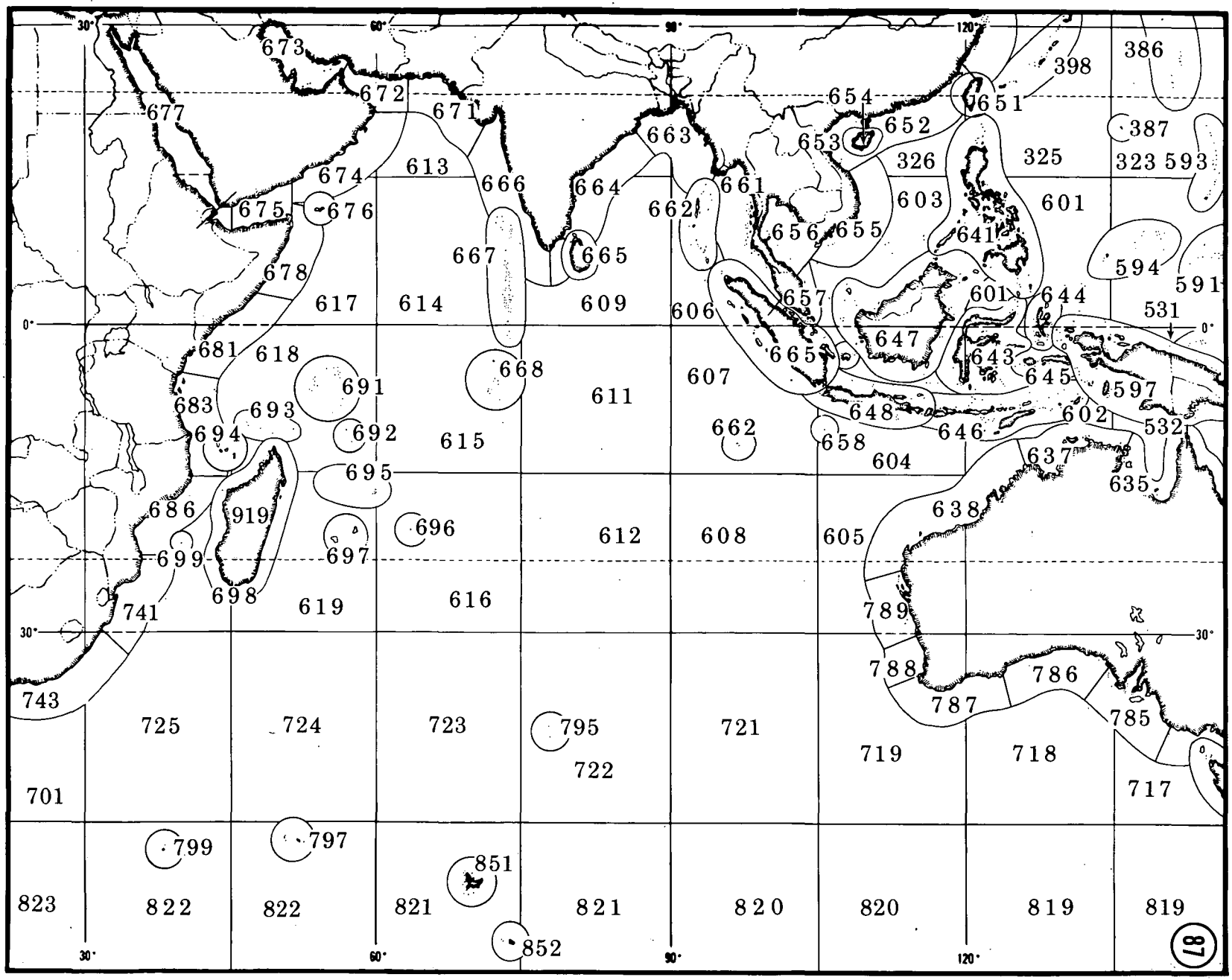
Map 84. Specific zones, tropical Atlantic region.



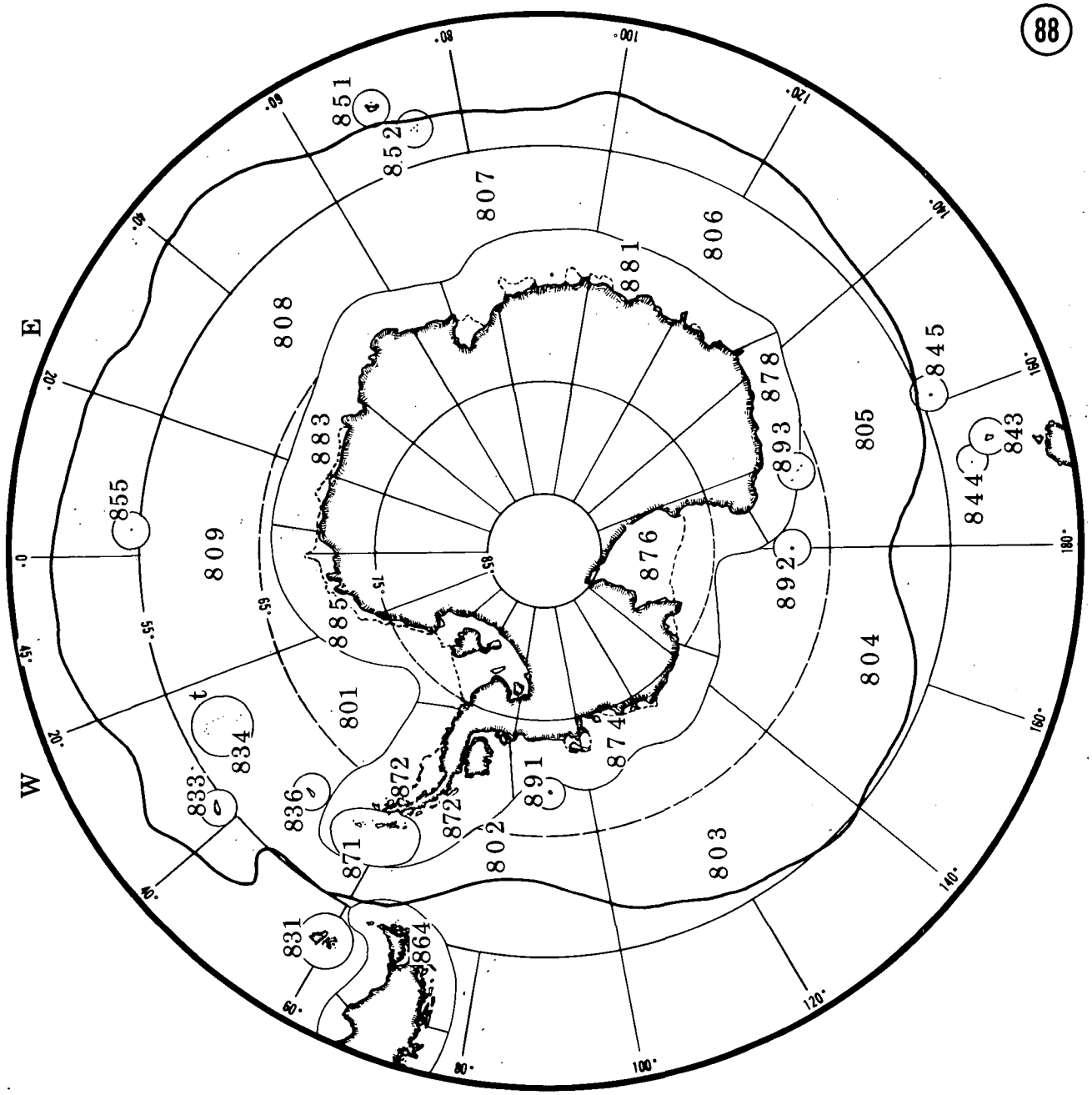
Map 85. Specific zones, southeast Pacific region.



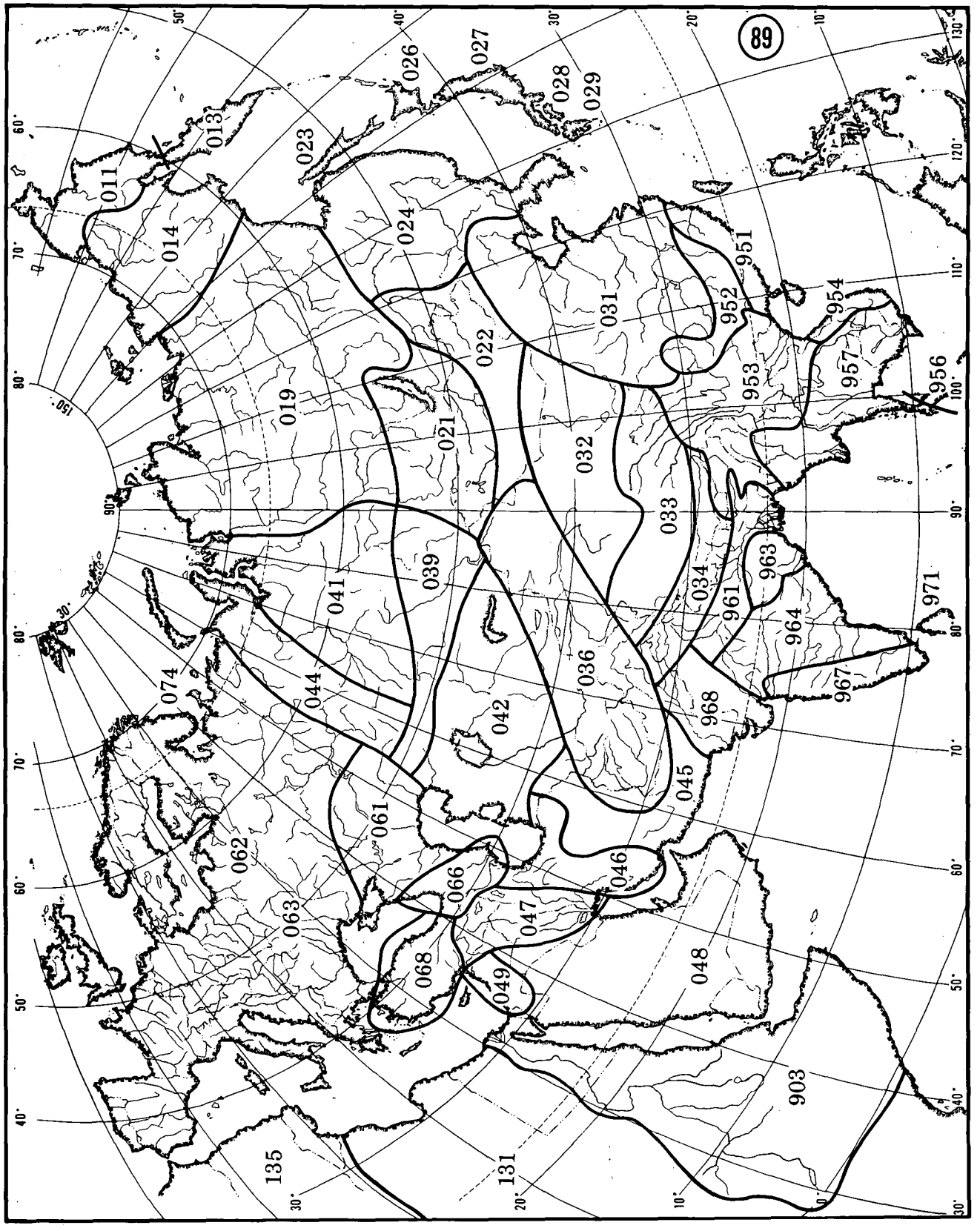
Map 86. Specific zones, South Pacific region.



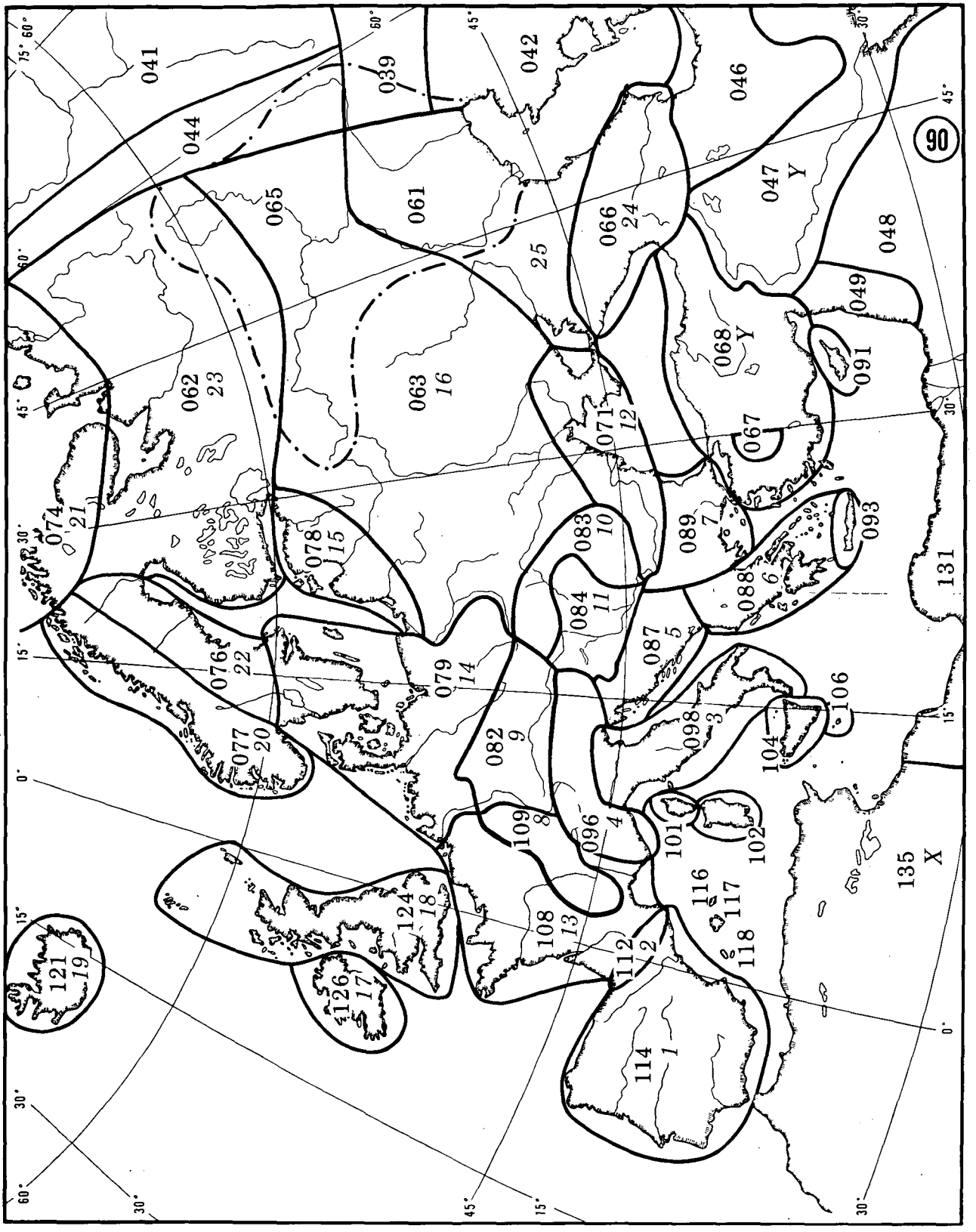
Map 87. Specific zones, Indian region.



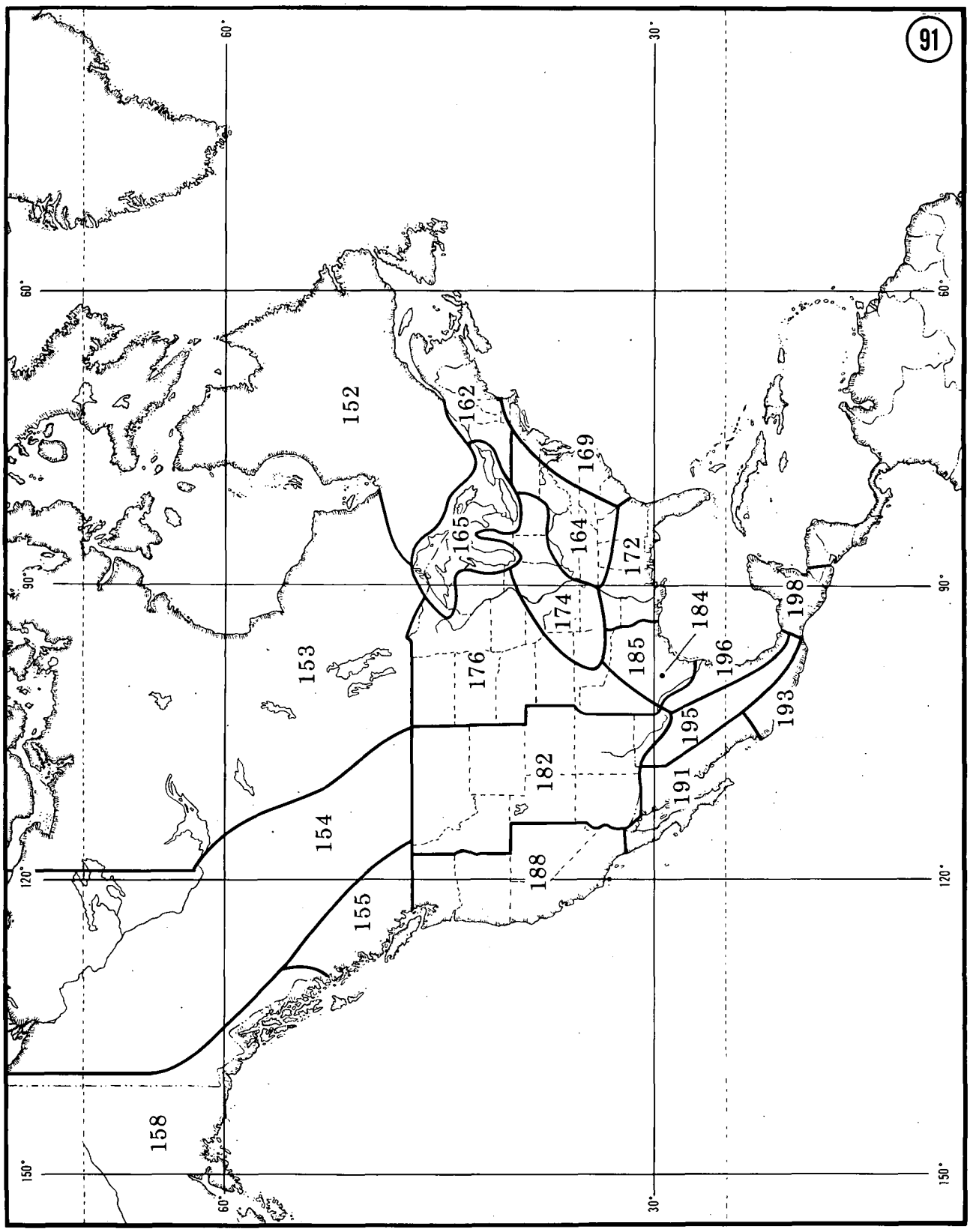
Map 88. Specific zones, south polar region.



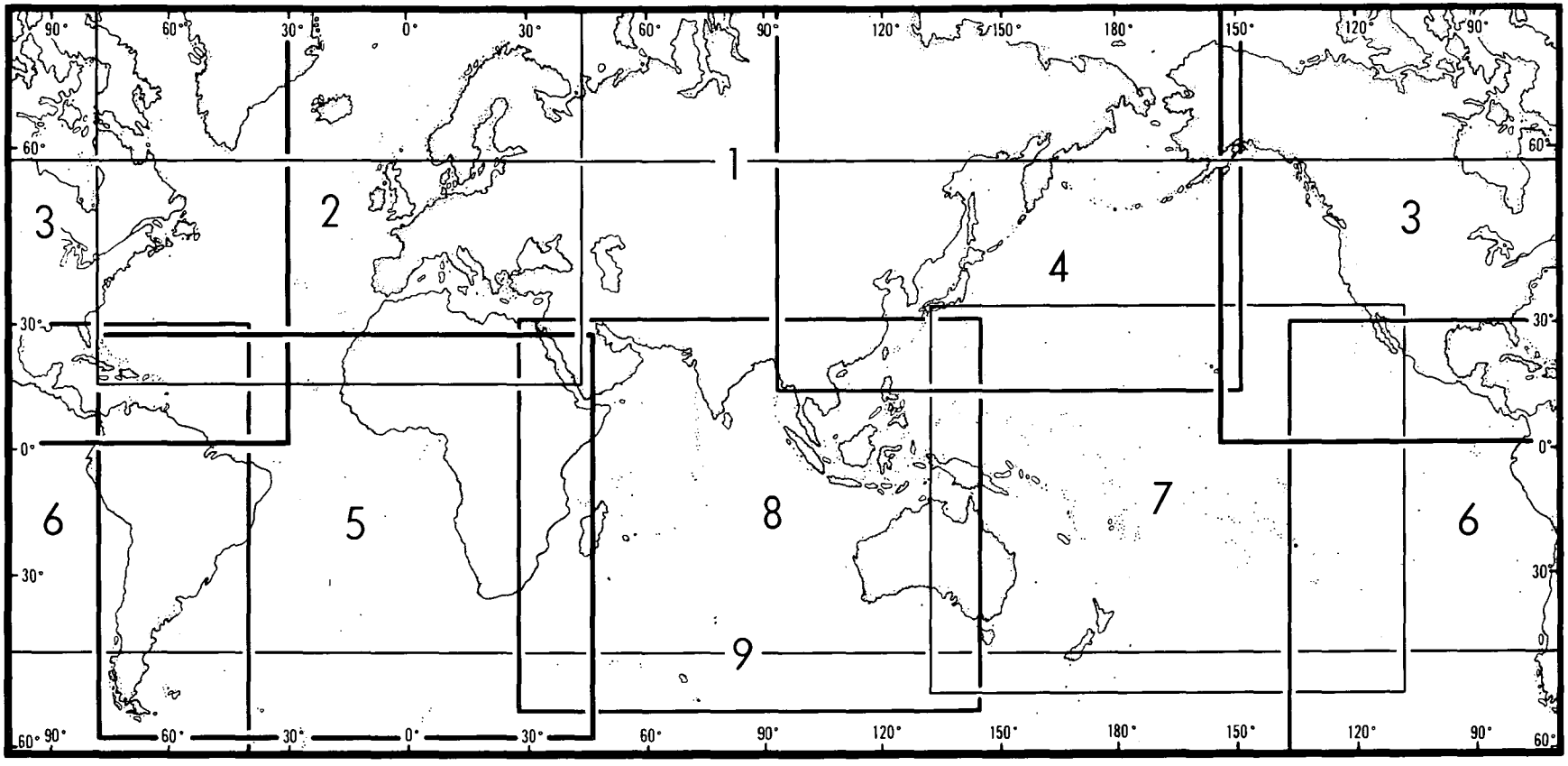
Map 89. Specific zones, Asia.



Map 90. Specific zones, west Palearctica.



Map 91. Specific zones, North America.



Map 92. Plan showing coverage of world by base maps used in this publication.

C. Chilton

Charles Chilton, the New Zealander, studied New Zealand freshwater amphipods, and his fine paper of 1894 is the basis of early knowledge on the group Indeed, his work is the best of the early products on underground species. He also reported on species from the Philippines Australia, and southeast Asia. His famous work on Chilka Lake in India has piqued the imagination of many persons wanting to explore more fully the fauna of this kind of coastal lagoon in the tropics.

E.V. Martynov

Martynov began publishing in 1919 on crustaceans in the area of Rostov-on-Don, extended outward through the Ukraine, the Dnieper, the Crimea, shore drainage of the Black Sea and took on more exotic places such as Issy-Kul, Turkestan and Lake Teletzkoye.

O.A. Sayce

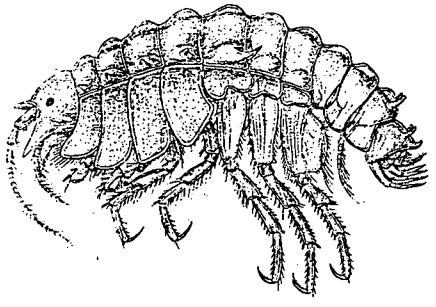
Sayce founded the freshwater amphipod fauna of Australia by describing in excellent form several species between 1899 and 1902; however, G.M Thomson had preceded him by describing in 1893 two species from Mount Wellington and a tributary of the Huon River in Tasmania.

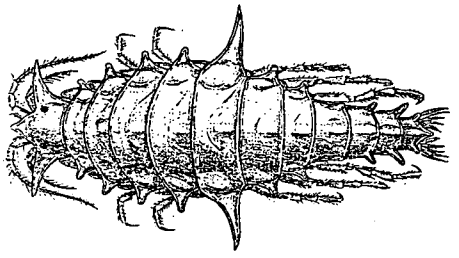
A. Schellenberg

Schellenberg published between 1925 and 1953, though his last papers were obviously published after his death. Schellenberg was one of the first and has been, until a decade ago, one of the few amphipod students to delve into the higher classification and interrelationships of freshwater amphipods. He recognized the unusual character of crangonyctoids (see especially, 1937c). He had a special fascination for Niphargus.

C.R. Shoemaker

Mr. Shoemaker worked at Smithsonian between 1912 and 1958 when he died in his 80's. He published several small papers on epigean Gammarus, Crangonyx, and various cave amphipods from North America and the Caribbean region.





Index

Only main pages cited for subjects
Valid Gammaridan genera italicized
Synonyms not italicized
Non-Gammaridans in quotation marks
Subgenera in parentheses

Abyssogammarus, 119, 121, 514
Acanthogammarid, 70, 104, 122
  gnathopod, 117, 122
Acanthogammarus, 122, 523
Accubogammarus, 87, 505
Adaptation, poor, to the sea, in Gammarus, 30
Afridiella, 64, 454
"Afrochiltonia", 162, 703
Akerogammarus, 95, 534
Allocrangonyx, 61, 447
  future of morph, 36
  origins, 35
Allotexiweckelia, 144, 648
Alloweckelia, 143, 643
Amathia, 594
Amathilla, 594
Amathillina, 94, 100, 530
"Ampelisca", 716
Amphipoda,
  in lakes and rivers, 105
  unusual characters, 6
Amphiporeia, 98, 566
ancestors,
  of groups, discussion, 33
ancestral models,
  corophioids, 8, 25
  crangonyctoids, 8, 29+
  freshwater, of Gammarus, 80, 81
Anchialella, 151, 677
anchialine, 137, 141, 145, 146, 149-151, 155
† Andrussovia, 94, 543
Anelasmopus, 139, 620
anisogammarids, 30, 32, 41
Anisogammarus, 132, 584
Annanogammarus, 133, 589
Anopogammarus, 88, 502
antenna 2,
  pontogammarid, 101
  stenogammarid, 101
Antroplotes, 688
Apocrangonyx, 59, 436
apomorphy, North Atlantic Ocean 37, 80, 107
Arctic connections to PontoCaspian Basin, 89, 104, 111
Argissa, 137, 606
Artesia, 67, 450
Asprogammarus, 574
Atlantic Ocean, youth, 107
Aucklandia, 713
Aurohornellia, 136, 604
Austrochiltonia, 162, 703
Austrocrangonyx, 422
austrogammarids, 29, 33, 53
Austrogammarus, 52, 421
austroniphargids. 63
  origins, 33, 35
Austroniphargus, 63, 445
Awacaris, 165, 703
Axelboeckia, 89, 94, 101, 531
Bactrurus, 60, 435
Baikal amphipods,
  ancestors, 69
  colors, 112
  connections to PontoCaspian, 89, 95, 96, 98, 104, 105, 118, 129
  dominant characters, 69
    groups, 39
  escapees,
    Gammaracanthus, 129
    Issykogammarus, 125
    Pallasea, Pallasiola, 128
    to Angara, 129
  evolutionary pattern, 118, 129
  faunal origins, see Bazikalova, Berg, China fauna
  genera, 71
  groups, 112
  introduction of amphipods, 70
  large species flocks, 4, 7, 39
  parallel to Caspian, 8
Baikalogammarus, 119, 123, 477
Baku, 85, 540
Baltic amber, 57
barrier, tropical, 15, 37, 80, 109
Barrowgammarus, 132, 586
bathyal, pathway, 80
  waters, oldest fauna, 6
Bathyceradocus, 133, 591
(Bathygammarus), 119, 474
Bathyonyx, 154, 684

Bathyporeia, 98, 567
Bazikalova's conclusions about Baikal, 127
Beaudettia, 140, 633
Behningiella, 97, 560
Berg, theories on Baikal, 126
Bering Land Bridge, Stygobromus crossing, 34, 61
biological demand in Mediterranean for fossorials, 109
body processes, see processes
Boeckaxelia, 89, 123, 485
Bogidiella, 64, 452
bogidiellids, 28, 32, 41, 43, 45, 46, 52, 63, 68
Bollegidia, 64, 455
Boruta, 436
Boscia, 663
(Brachyuropus), 122, 523
brackish cobble, see seashore
Brandtia, 122, 482
brood pouch, see marsupium
Bruun-Menzies thesis, 80
calcium rich streams with echinogammarids, 71, 81
Caliniphargus, 663
Calliope, 596
"Calliopius," 135, 596
captions, see legends
cardiophilids, 96, 97
Cardiophilus, 97, 111
Cardium, with cardiophilids, 97
Carineogammarus, 132, 591
Carinogammarus, 122, 475
Carinurella, 160, 699
Carinurus, 123, 483
Carpathoniphargus, 688
Casco, 136, 599
"Caspicola", 166, 705
Caspicolidae, 166
Caspiella, 705
Cephalogammarus, 95, 538
ceradocids, 32, 33
ancestral to weckeliids, 33, 142, 143
Ceradocoides 139, 617
Ceradocopsis, 141, 635
Ceradocus, 138, 614
Ceradomoera, 139, 616
Ceratogammarus, 119, 121, 518
Chaetogammarus, 81, 92, 487
checklist of genera, 359
Cheirocratella, 136, 597
cheirocratids, 8, 27 BOX, 37
Cheirocratus, 27, 136, 598
Cheirogammarus, 122, 522
"Chiltonia," 161, 705
Chimaeropsis, 606
China fauna, 126
Chloris, 634
classification, 15
of genera in different familial groups, 20, 26
climates, torrid, see tropical barrier
cobble, see seashore
coldwater, see cool
Comatogammarus, 84, 497
commensals,
in marsupia of other amphipods by Pachyschesis, 98
on Cardium by Cardiophilus, 97
on decapods by Iphigenella, 96
compactogammarids, 97
Compactogammarus, 97, 555
conferences, international, on Gammarus, Niphargus, 159
Coniurus, 123, 485
Constantia, 611
continental,
clefts, see rift
drift, Australia, 7, 8, 27, 28, 48
Lusitanean, 86
convergence,
between Baikal and Caspian taxa, 8
Gammarus of Baikal and TransUralia, 73
of phoxocephalids and gammaroids, 8
Pachyschesis, 98
cool water orientation, 6, 7, 15, 80
Corophiida, as primitive, 8, 25
Corophioidea, 162
corophioids, 25, 26, 50, 63, 70
Corophiomorphus, 119, 494
"Corophium," 89, 104, 162, 705
Cottesloe, 143, 637
coxal gill seven, 26, 30-32, 50

crangonyctids, 28, 34, 47, 49, 57
crangonyctoids, 28-30, 47
  as ancestors, 33, 130
  diversity, 49
  early, 8, 28-30, 33
  ecological distinctions, 35
  evolutionary flow to northwest in America, 34
  Holarctica, 57
  reinvading freshwater, 31
  replacerment by niphargids, 49
Crangonyx, 58, 433
crawlouts, 5
cryothermic, 8
Crypturopus, 124, 574
cusps, see processes
data,
  limitations, 20
  on amphipods, 1, 4
Denticeradocus, 614
Derzhavinella, 73, 92, 471
dexaminids, 37
Diasynurella, 59, 436
dikerogammarids, 94
Dikerogammarus, 95, 537
dispersal rates, 7
  blocking by subtropical climates, 27
  during era of Pangaea, 28, 29
distribution of species,
  widespread, 5, 81, 159
diversity,
  crangonyctids, 49
  in classification of genera, 21, 26
"Dogielinotus," 162, 706
domicolous amphipods, 25
Dorogammarus, 123, 484
drift, upstream, see invasion
drying, see Mediterranean
Dulichiella, 149, 667
Dulzura, 145, 655
Dybowskia, 479
echinogammarids, 92
Echinogammarus, 74, 92, 487
  evolution from Gammarus, 80
  founder of pontogammarids, 81
  catacumbae, 85
  warpachowskyi as intrinsic genus, 73, 81, 95, 533
Echiuropus, 124, 574
Elasmopoides, 138, 620
Elasmopus, 139, 626
endemism, 7
Eocene Sea (and PreOligocene), 36 45, 82
Eocrangonyx, 62, 444
Eogammarus, 132, 585
Eoniphargus, 130, 581
Eosynurella, 59, 436
Eriopis, 670
Eriopisa, 148, 670
Eriopisella, 151, 679
eriopisellids, 32, 35, 46, 55, 151, 152
  as ancestors of niphargids, 35
eriopisids, 147, 151, 153, 154
escapees from Baikal to glacial lakes, 128
  see Baikal
Eucarinogammarus, 119, 122, 476
Eucrangonyx, 433
eulimnogammarid, 69, 70
  gnathopods, 69, 117, 118
Eulimnogammarus, 119, 491
Eurybiogammarus, 120, 121, 511
eusirid-calliopiid, 164
Euxinia, 96, 550
Euxinic phase of PontoCaspia, 110
evolutionary cycle, summary, 31
facts and conclusions, amphipods, 4
Falklandella 56, 431
Falkland Islands, connections to Africa, 48, 57
filtrative mode, 25
fleshy telson, 8, 26, 31
flocks in lakes, 7
Fluviogammarus, 121, 513
Fluviogammarus, invalid homonym, 463
Fontogammarus, 87, 508, (535)
fossil record, 4
fossils, Eocene amber, 57
  Sarmatian, 94
fossorial (digging),
  Baikalian, 69, 118
  evolution of mode, 99
  PontoCaspian, 38, 81, 99
founder species, Baikal, 39
freshwater,
  ancestry of gammarids, 80, 81
  stock, 105
Galapsiellus, 150, 678
Gammaracanthus, 89, 122, 523

Gammarella, 141, 637
gammarellids, 30, 31, 37, 134, 135
Gammarellus, 111, 134, 594
(Gammarisca), 124, 572
gammaroids, 25, 27, 29, 105
  parallel to corophioids, 25
Gammaroporeia, 131, 580
Gammarosphaera, 125, 578
Gammarus, 74, 463
  emergence to the sea, 15, 30, 74 80, 105
  not naturally in Baikal, 70
  poorly adapted to sea, 37
  taxonomic problems, 71, 72, 82
  chevreuxi, 78
  fasciatus, 81
  lacustris, 81
  locusta morphs, 77
    taxonomic problems, 82
  minus, 81
  pulex, 82
    taxonomic problems, 82
  tigrinus scourge, 77
  wilkitzkii, 78
Garjajewia, 122, 522
genera,
  diverse, Tables 4-10, 59, 75-79
  diversity of classificatory position, 20, 21, 26
  keys, see keys
  numbers of, 4
  widespread, Tables 4-10, 59, 75-79
geographic presentation, 19
Giniphargus, 55, 152, 683
glacial lakes, 89
  relicts, 39, 89, 104,
Gmelina, 94, 100, 528
gmelinids, 93
Gmelinoides, 122, 486
Gmelinopsis, 94, 101, 532
gnathopods, acanthogammarid, 117, 122
  non-predatorial, 117
gnathopodal dominance, 73, 100, 117
gnathopod 2, reduced and basic, 70
Gondwana and South America, 28
Goplana, 436
"Grandidierella," 163, 706
Grayia, 594
(Gymnogammarus), 119, 474
Hadzia, 146, 658
hadziids, 34, 41, 45, 140, 142
  origins, 34, 35
hadzioids (= melitoids), 137
Hakonboeckia, 121, 123, 517
handbook, Gammarida, 417
  other freshwater amphipods, 703
Harmomia, 634
Harmonia, 634
Haploginglymus, 157, ?688, 697
"Haustorioides", 162, 707
haustorioids, 38, 80
+Hellenis, 93, 125, 611
Hennigian principle of antiquity, 15
Hertzog Organs, 64, 65
Heterogammarus, 119, 472
Holarctica, 28, 29
Holsingerius, 144, 650
(Homalogammarus) 479
Homocerisca, 125, 576
Homoeogammarus, 487
Hornellia, 136, 600
human interference,
  canals, dams, fishing, 81, 108 111, 126
  distributions of amphipods, 27, 77, 103, 105, 161
Hurleya, 54, 422
"Hyale," 162, 716
hyalellids, 28, 29, 49
"Hyalella," 87, 161, 708
Hyalellopsis, 125, 576
Hyaloides, 714
icelake, Wurm, 40, 104
identification, expertise, 83
  taxonomic process, 82
Ifalukia, 140, 632
Ilvanella, 87, 503
immigration into North Atlantic, 80
impoverishment
  of Mediterranean fossorials, 38, 105
  North Atlantic Ocean, 36
Incratella, 136, 600
incursions from the sea, 151
Indoniphargus, 152, 681
ingolfiellidean, 65
inquilinous,
  amphipods, 25
  phoxocephalids, 15
interference, see human

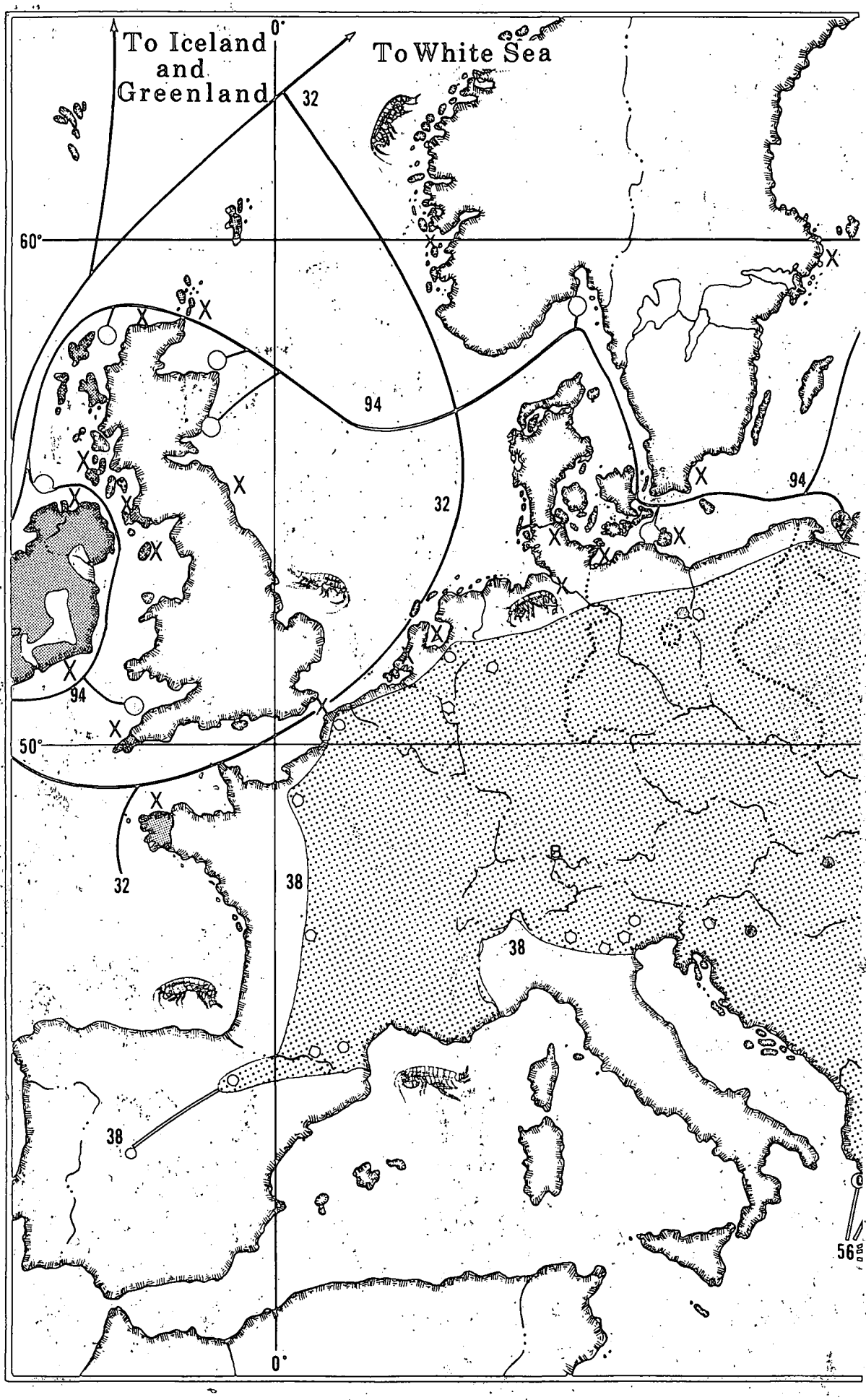
interstitial habitat,
  Ilvanella, 88
  Metacrangonyx, 146
  Pseudingolfiella, 66
  sarothrogammarids, 86
introduction of amphipods into
  Lake Baikal, 70
invasion,
  of Europe by Gammarus
    tigrinus, 77
  of PontoCaspian tributaries by
    lacustrine species, 81, 105
  of sea by gammaroids, 30
Iphigenella, 96, 100, 541
irreversibility of evolution, 2
Issykogammarus, 125, 520
Jerbarnia, 136, 603
Jesogammarus, 132, 588
Jovanoniphargus, 688
Jugocrangonyx, 64, 452
Jugogammarus, 95, 535
"Kamaka", 163, 709
Karamaniella, 688
Kerguelenella, 457
Kergueleniola, 65, 457
keys,
  acanthogammarids, 520
  anisogammarids, 388, 583
  Asia, east, 412
  Australia, 414
  austrogammarids, 420
  austroniphargids, 445
  Baikal of Bazikalova, 113
  Baikal-Caspian, 398
  Baikal congruents, 399, 400
  Baikal geographic, 403
  Bazikalova's Baikal, 113
  blind taxa, 402
  bogidiellids, 448
  Brandtia-group, 462
  cardiophilids, 559
  Caribbean, 413
  Caspian-Baikal congruents, 398
  ceradocids, 613
  cheirocratids, 593
  compactogammarids, 401, 553
  crangonyctids, 385, 432
  crangonyctoids, 390, 419
  dikerogammarids, 525
  elimination to non-gammaroids,
    379
  elucidation of gammaridans, 379
  eriopisellids, 679
  Falkland Islands, 414
  fluviogammarids, 510
  gammarellids, 637
  gammarelloids, 383
  gammarids, 460
    of Key L, 396
  gammaroids, 459
  geographic, 403, Appendix V
  Gmelina-Amathillina group, 391
  gill 7 (coxal) absent, 386, 402
  hadziids, 639
  hadzioids, 612
  Heterogammarus subgenera, 120
  interstitial Key P, 402
  Kerguelen Island, 414
  macropereiopids, 569
  Madagascar, 414
  maxillipedal dactyl reduced, 389
  melitids, 662
  mesogammarids, 578
  metohiids, 394, 502
  micruropids, 569
  Micruropus subgenera, 572
  Nearctica, 413
  New Zealand, 414
  niphargids, 400, 686
  North America, 413
  Notogaea, 414
  Palearctica,
    east, 412
    west, 410
  Paleotropica, 415
  phyletic, 379, Appendix V
  Poekilogammarus subgenera, 414
  PontoCaspian, 89, 90, 407
  pontogammarids, 389, 542
  pontogammarins, 543
  pontoporeiids, 562
  pseudocrangonyctids, 442
  reduced branchiae, 382
  salentinellids, 700
  sarothrogammarids, 394, 493
  South Africa, 414
  South America, 414
  starting to gammaridans, 381
  sternal gills absent, 402
  sternophysingids, 430
  tropical, 415
  vermiform, 382
  weckeliids, 639
Koshovia, 121, 514

Kroyera, 710
Kuzmelina, 94, 529
Lac Mer, 38, 86, 89, 105, 108
Lagunogammarus, 80, 463
Lake Baikal, see Baikal
lake dweller, (Wolgagammarus), 97
Lanceogammarus, 96, 539
Laurasia, 31, 34
Laurentia, 29
legends for illustrations, 257
Lepleurus, 463
Leptostenus, 119, 473
Leptothoe, 622
Liagoceradocus, 146, 657
Linguimaera, 622
Linnean names, abandonment, 19
Lockingtonia, 708
Lobogammarus, 121, 516
Locustogammarus, 132, 589
Longigammarus, 84, 500
Lupimaera, 139, 625
Lusigammarus, 85, 496
Lysianassidae, 166
Lyurella, 59, 436
Macrohectopus, 125, 137, 611
Macropereiopus, 123, 569
Maera, 139, 622
Maeracunha, 141, 635
Maerella, 136, 602
Maeropsis, 139, 621
Maleriopa, 148, 676
Mallacoota, 139, 631
mantle cavities of Cardium,
  amphipods in, 97
maps, distributions, explanation,
  41
marine fauna, apomorphy and
  impoverishment, 36
Marinogammarus, 92, 487
marsupial commensals, 98, 125
Martynovia, 688
maxilla 1, comb, 87
Mayaweckelia, 144, 646
Mediterranean, drying, 34, 86, 105,
    108, 110
  impoverishment of fossorials,
  38, 105
Megalonoura, 605
Megaluropus, 136, 605
Megamoera, 663
Melita, 148, 149, 163
melitids, 32, 33, 46, 147
  ancestral to niphargids, 33
Melitoides, 149, 671
melitoids, 137
Melphidippa, 137, 607
Melphidippella, 137, 609
melphidippoids, 136
Melphisana, 137, 610
Menzies, see Bruun
Mesogammarus, 131, 578
Metaceradocoides, 133, 141, 592
Metaceradocus, 136, 601
Metacrangonyx, 146, 660
Metahadzia, 145, 652
Metaniphargus, 146, 656
Metapallasea, 120, 479
"Metoediceropsis," 163, 710
Metohia, 87, 504
metohiids, 34, 43, 87
Meximaera, 139, 622
Mexiweckelia, 143, 644
microcosms, 19
(Microgammarus), 124, 572
Microniphargus, 152, 682
"Microphotis," 163, 716
micruropid, 122, 124
Micruropus, 124, 572
"Monoculodes," 163, 710
morphism, 7
morphs, Gammarus locusta, 77
Mucrogammarus, 72, 463
Mulleria, 622
mysidiform pelagic genus,
  Macrohectopus, 39
Nainaloa, 149, 673
Nearctica,
  crangonyctoids, 29
  lack of niphargids, 34
  late arrival of Gamarus, 31
nektonic domination, Baikal, 119
Neogammaropsis, 626
Neogammarus, 84, 499
Neoniphargus, 53, 427
Neoweckelia, 143, 642
nestling amphipods, 25
Netamelita, 152, 680
Niphargellus, 160, 698
niphargids, 29, 33, 35, 49, 156,
  constraining crangonyctids, 8
  origins, 33, 35, 152
Niphargogammarus, 97, 102, 557
Niphargoides, 97, 554

Niphargoides group, now
Compactogammarus group, 97
Niphargonyx, 443
Niphargopsis, 160, 697
Niphargopsis, homonym, 445
Niphargus, 156, 688
nomenclature, methods, 20
non-gammaridan freshwater
amphipods, 161
North Atlantic Ocean, youthful, 36,
80
Nuuanu, 143, 637
nuuanuids (=Gammarella group), 141
Obesogammarus, 96, 546
Odontogammarus, 121, 519
oedicerotids, 163
Ommatogammarus, 123, 571
"Onisimus," 89, 166, 710
(Onychogammarus), 119, 474
"Orchestia," 162, 711
order, see progression
organization, geographic mode in
this treatise, 32
origins, of amphipods, 4, 8, 27
by invasion of freshwater, 32
in Baikal, 69
of Neogenic Gammaroids in
freshwater, 105
of niphargids, 33
ornamentation, see processes
Orniphargus, 688
osmotic organs, sternal gills, 30
Ostiogammarus, 487
Pachyschesis, 98, 125, 571
†Paleogammarus, 57, 432, ?433
Paleozoic, origin or existence of
amphipods, 7
Palicarinus 120, 477
Pallasea, 120, 479
Pallasiella, 479
Pallasiola, 480
Pandora, 547
Pandorites, 96, 547
Pangaea, 8, 27, 28, 48
Parabogidiella, 67, 451
"Paracalliope," 165, 711
Paraceradocus, 140, 618
"Paracorophium," 66, 163, 712
Paracrangonyx, 52, 65, 457
Paragarjajewia, 121, 513
Paraleptamphopus, 52, 164, 712
Paramelita, 56, 426
Paramesogammarus, 131, 579
Paramexiweckelia, 143, 645
"Paramoera," 164, 713
"Paramoerella," 164, 714
Paraniphargoides, 97, 556
Paraniphargus, 149, 675
Parapallasea, 120, 481
Parapherusa, 140, 634
Parasalentinella, 155, 702
Paraweckelia, 139, 142, 143, 641
Parelasmopus, 139, 629
Parhomoeogammarus, 487
"Parhyale," 162, 714
Parorchestia, 711
Pectenogammarus, 85, 498
Pentagonurus, 479
Pephredo, 463
Permo-Triassic crustacean groups,
29
Perthia, 55, 425
Phaenogammarus, 688
Pherusa, 143, 637
Pherusana, 143, 637
Philolimnogammarus, 120, 121, 515
phoxocephalids, 7, 15, 37, 105,
convergence, 8
fossorial supremacy, 15
independence, 110
origins, 38, 102
parallel to pontogammarids, 8
Phreatogammarus, 50, 419
Phylluropus, 605
Plesiogammarus, 122, 521
Pleuracanthus, 481
Poekilogammarus, 119, 474
Polyacanthisca, 121 518
"Pontharpinia," 102
PontoCaspian Basin, 38
connections to Baikal, 8, 89,
95, 96, 98, 104, 105
pontogammarids, 96, 103, 109, 105,
124
antenna 2, 101
not emigrating to Mediterranean
109
parallelism to phoxocephalids,
8
swarm, 81
Pontogammarus, 96, 548
Pontoniphargus, 160, 687
Pontoporeia, 89, 98, 103, 563
pontoporeiids, 32, 37, 38, 98

position of genera, diversity of classification, 20, 21
†Praegmelina, 94, 544
prehensility, loss, 31
presentation, geography, 19
primitive amphipod, 24
Priscilla, 565
Priscillina, 98, 565
Prionochelius, 611
processes, dorsal body, 112
significance in evolution, 72 73
Procrangonyx, 62, 444
progression, evolution, primitive to advanced, 19
(Propachygammarus), 479
Protocrangonyx, 54, 66, 429
Protohadzia, 145, 653
Protoniphargopsis, 688
Psammogammarus, 147, 668
Psammoniphargus, 145, 150, 659
Pseudalibrotus, see Onisimus, 710
Pseudingolfiella, 65, 458
Pseudoceradocus, 619
pseudocrangonyctids, 28, 62
Pseudocrangonyx, 62, 66, 442
Pseudogammarellus, 594
Pseudomicruropus, 124, 575
"Pseudomoera," 165, 714
Pseudoniphargus, 155, 685,
Pygocrangonyx, 146, 661
Quadrivisio, 140, 619
rainforests, poverty, 7
raker comb, 87
Ramellogammarus, 132, 587
"Relictomaera," 164, 715
relicts,
Allocrangonyx, 58
crangonyctoids, 8
freshwater gammaroids, 32
gammarellids, 31
glacial, 39, 40
of arctic origin, 104
PontoCaspian, 103, 107, 108
sarothrogammarids, 86
Rhipidogammarus, 84, 501
rift,
lakes, poverty, 4, 7, 49
of Pangaea, 80
valley, North Atlantic Ocean, 37
Rivulogammarus, homonym and synonymn, 463, 513
(Rostrogammarus), 119, 474
Rotomelita, 149, 672
Salentinella, 155, 700
salentinellids, 34, 155
Saliweckelia, 145, 651
Sandro, 63, 446
San Marcos Well (and South Texas Aquifer), 34, 45
Sarmatian,
fossils, 94
phases of PontoCaspian Basin, 110
Sea, 38, 110
sarothrogammarids, 25, 34, 43, 84, 110
origins, 33
survival, 34
Sarothrogammarus, 83, 493
Scamballa, 711
scourge, Gammarus tigrinus, 77
seashore brackish cobble, 84
"Seba," 166
Sebidae, 34
sebids, 34, 165
"Seborgia," 165, 715
(Setogammarus), 124, 572
setosity, 99
of uropods, Baikal, 118
Shablogammarus, 95, 536
Sinus Borealis, 30, 36
sluicing, of relicts, in glacial lakes, 40, 104
Smaragdogammarus, 574
South America, sparsity of freshwater amphipods, 28, 48
Sowinskya, 72, 92, 471
Spasskogammarus, 132, 588
species flocks,
Baikal, 7
Titicaca, 7
species numbers, 4
Spelaeogammarus, 67, 449
"Spelaeorchestia," 162, 715
Sperchius, 433
Spinacanthus, 121, 517
Spinulogammarus, 132, 586
Stebbingia, 713
Stebbingian system of classification, 16

"Stenocorophium," 163, 715
stenogammarid antenna two, 101
Stenogammarus, 96, 101, 551
Stenogammarus sp. 552
sternal gills, 8, 27-29, 50, 57
  loss in Nearctica, 29, 57
  respiratory or osmosis, 30, 47
  response to oxygen deficiency, 49
sternobranchiate diversification, 48
"Sternomoera," 164, 716
Sternophysinx, 56, 430
stygobionts, Tethyan, 142
Stygobromus, 59, 436
Stygodytes, 688
Stygonectes, 59, 436
Stygoniphargus, 688
summary and retrospect, 31, 41, 43, 55, 107, 129, 130, main, 166
Supraniphargus, 688
Syncarida, 32
Synpleonia, 59, 436
Synurella, 59, 436
Tabatzius, 143, 639
Tadzhikistania, 84, 495
Tadzocrangonyx, 87, 506
Talitroidea, 161
"Talitroides," 716
taxonomic problems, Baikalian, 71
  Gammarus, 71, 72, 82
taxonomy, general, 82
  subtle, 82.
"Talorchestia," 716
teeth, see processes
telson, fleshy, 8, 26, 31
Tegano, 149, 674
terms, 21
Tethys, Tethyan, 34, 37, 38, 105, 108, 110, 142
Tetrachelius, 611
Texiweckelia, 87, 144, 647
Texiweckeliopsis, 144, 649
thermophoby, 1
Thersites, 567
Titicaca, Lake, 5, 7, 28, 49
torrid climates, see tropical barrier
transplants, see scourge and human interference
tropical barrier, abhorrence by freshwater amphipods, 15, 27 28, 37, 48, 53, 110
Tulearogammarus, 601
Turcogammarus, 95, 545
Typhlogammarus, 73, 88, 509
Unimelita, 427
upstream drift, see invasion
Uroctena, 55, 423
Uroniphargoides, 97, 102, 554
uropod 3,
  ceradocid, 32, 137
  freshwater, 32
  niphargid, 33, 36
  outer ramus, article 2, 32, 142, 145
  parviramous, 33
  sense organ, 33, 36
urosomal spines and setae, 28-30, 88
Victoriopisa, 148, 669
Weckelia, 143, 642
weckeliids, 33-35, 41, 43, 45, 138, 140, 142
  origins, 33-35, 138, 140, 142
Weyprechtia, 135, 595
(Wolgagammarus), 97, 551, 553
Wurm Icelake, 40, 80, 108
Yogmelina, 94, 526
Zaramilla, 563
Zenkevitchia, 88, 507
Zernovia, 97, 561


To Iceland and Greenland
To White Sea
0°
60°
50°
32
94
38
56