

Italian micropaleontologic contributions issued from 1957 to 1960

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Italian micropaleontological contributions are sometimes sparsely published in different periodicals and academic « Acta », not easily accessible. Thus it seems worthy to give here the references and a short abstract of all the papers issued in Italy during the last few years,

Papers of 1961 and 1962 will be reported soon.

The writer wants to acknowledge all the Micropaleontologists working in the Universities and Oil Companies, who did kindly give her all the informations requested.

ANNOSCIA, E. & MANTOVANI, M. P., 1957, *Fossili maestrichtiani nel flysch della Valle del Senni*: Boll. Soc. Geol. Italiana, vol. LXXVI, fasc. I, pp. 28-35, fig. 1-6.

The Authors have found evidence of Maestrichtian age in some outcrops of limestone of the Flysch of Senni Valley, formerly assigned to the Middle Eocene. The examination of several samples is reported; their location and the illustration of the microfauna are given.

ASCOLI, P., 1957, *Microfaune del Tortonian di Mombisaggio e della serie pliocenica di Volpigliano*: Riv. Italiana Pal. Strat., vol. LXII, n. 1, pp. 1-30, fig. 1, tav. I-II.

The microfaunas of 8 field samples collected between Mombisaggio and Torre dei Calderari and of 5 samples from the Middle-Upper Pliocene near Volpigliano have been studied.

The Tortonian microfaunas, very rich of spe-

cies (about 200), contain a new variety of *Cibicides floridanus*: *C. floridanus* Cushman var. *suturatus* n. var. The Pliocene microfaunas are scarce (about 60 spp.). The environmental conditions are of a littoral-neritic sea. These microfaunas are compared with some coeval ones of Northern Italy.

AZZAROLI, A., 1958, *L'Oligocene e il Miocene della Somalia. Stratigrafia, Tettonica, Paleontologia*: Palaeont. Italica, vol. LII (n. ser. XXII), pp. 1-143, fig. 1-34, tav. I-XXXVI.

A detailed reconstruction is given of the stratigraphy from the Lower Oligocene to the Middle-Upper Miocene in Somaliland and of the age of the tectonic phases. The fauna includes over 180 species and varieties. These are Mollusca, Corals and very well preserved Foraminifera. Concerning Foraminifera, the following new species and subspecies have been established: *Operculina africana* n. sp.; *Spiroclypeus reticulatus* n. sp.; *Lepidocyclina* (*Nephrolepidina*) *pusilla* n. sp.; *Lepidocyclina* (*Eulepidina*) *contorta* n. sp.; *Lepidocyclina* (*Eulepidina*) *sphynx* n. sp.; *Lepidocyclina* (*Multilepidina*) *palustris* n. sp. *Heterostegina complanata* Meneghini subsp. *minuta* n. subsp.

BARNABA, P. F., 1959, *Geologia dei Monti di Gubbio*: Boll. Soc. Geol. Italiana, vol. LXXVII, fasc. 3, pp. 39-59, tav. I-II, fig. 1-18.

Stratigraphic and tectonic characters are described of the Mesozoic structure of Gubbio (Umbria). The age of the stratigraphic series ranges from Middle-Upper Jurassic to the Middle Miocene. Litological difference and microfaunal associations of each term are here illustrated.

BASTIANUTTI, C., 1960, *L'Acquitano ed il Langhiano del Trevigiano occidentale*.

Studio micropaleontologico: Mem. Acc. Pat. Sc. Lett. Arti, Cl. Sc. Mat. Nat., vol. LXXII, pp. 135-144.

Microfaunas of five samples from Lower Miocene of western Trevigiano have been examined. Two stages are represented: Langhiano and Aquitaniano. Foraminiferal associations show the following environmental conditions: in the Langhiano, rich in species and specimens, a deep sea environment of tempered warm water with favorable conditions for life, in the Aquitanian a marine neritic environment of tempered cold water.

BELLONI, S., 1960, *La serie retica del Monte Rena*: Riv. Italiana Pal. Strat., vol. LXVI, n. 2, pp. 155-172, tav. XV.

A description is given of the rhaetian formation of M. Rena (Val Seriana) and its chronological subdivisions based on macro- and microfauna. The most significant forms of microfossils are described and illustrated.

BENELLI, G., 1958, *Nuovi dati stratigrafici e paleontologici sul M. Soratte (Lazio)*: Pubbl. dell'Ist. di Geol. Univ. Roma, n. 29 (anno VII), pp. 1-12, tav. I-VII, fig. 1.

Some outcrops studied at M. Soratte are described. Reddish brown limestone is present with detritical-organogenic layers, containing *Vidalina* and *Globotruncana*. This limestone is eteropic with « scaglia » containing *Globotruncana*. Also a bit of eocenic « scaglia » was found. The largest part of the formation must be referred to an Upper-Cretaceous riff.

BOLLI, H. e CITA, M. B., 1960, *Globigerine e Globorotalie del Paleocene di Paderno d'Adda (Italia)*: Riv. Italiana Pal. Strat., vol. LXVI, n. 3, pp. 361-402, tav. 33-35.

Twenty one species and subspecies of the gen. *Globigerina* and *Globorotalia* are described and figured from the Paleocene section exposed along the river Adda near Paderno (N. Italy). One species, *Globorotalia acutispira*, is described as new.

The fauna compares well with that found in the Lizard Springs formation of Trinidad. The same 5 zones of the Paleocene of Lizard Springs are recognized in the Paderno section.

CHARRIER, G., 1957, *Fauna pliocenica di S. Gaudenzio (Lessona pres. Biella)*. No-

ta II: *Foraminiferi, Molluschi, Pteropodi*: Boll. Serv. Geol. d'Italia, vol. LXXIX, fasc. 1-2, pp. 355-371, fig. 1, tav. 1.

The Author emphasizes the occurrence of a foraminiferal fauna of *Elphidium crispum*, and describes a new species of Pteropode: *Cavolinia (Hyalaea) tridentata* Forskal var. *pedemontana* n. var. in the Upper Pliocene of S. Gaudenzio (Lessona, near Biella).

CHINO, A., 1960, *Studio micropaleontologico e granulometrico del pozzo n. 55 (P. Nazionale) di Abano Terme (Padova)*: Mem. Acc. Patavina Sc. Lett. Arti, Cl. Sc. Mat. Nat., vol. LXXII (1959-60).

A micropaleontological and granulometric study is presented of twenty-nine samples from the well n. 55 drilled at Abano Terme (Padova). Microfaunistic associations allow an attribution of the lowest stages to the Upper Oligocene and Miocene age. For the younger stages only a surely post-tortonian attribution is possible. The microfaunas indicate a coastal environment of sedimentation.

CITA, M. B., 1957, *Studi stratigrafici sul Terziario subalpino lombardo: Sintesi stratigrafica della Gonfolite*. I.: Riv. Italiana Pal. Strat., vol. LXIII, n. 2-3 pp. 79-157, fig. 1, tav. I (V).

The foraminiferal microfaunas permit a subdivision of the « Gonfolite » in faunizones and biozones through characteristic associations and isolated species.

Some stratigraphic sections of different localities are compared on the base of the faunistic zones.

CITA, M. B., 1958, *Nuovo contributo alla conoscenza del Daniano in Italia*: Boll. Soc. Geol. Italiana, vol. LXXVII, pagine 11-13.

The comparison between species found in the Globigerinae faunizone in the transitional levels between the Cretaceous and Eocene of the series of Paderno d'Adda and those described by Troelsen from typical Danian, permits to confirm the Danian age of this faunizone.

CITA, M. B., 1959, *Litofacies e biofacies della Gonfolite lombarda*: Boll. Soc. Geol. Italiana, vol. LXVII, pp. 1-12.

Litofacies and biofacies of the « Gonfolite » formation are described and the importance of thick synorogenic conglomerates is pointed out.

Micropaleontological research allowed to recognize Lower and Middle-Upper Oligocene, Aquitanian and Lower-Middle Miocene.

CITA, M. B., 1959, *Osservazioni stratigrafiche sul Lias del Monte Baldo*: Riv. Italiana Paleont. Strat., vol. LXV, n. 4, pagine 359-365, fig. 1.

Two stratigraphical sections observed in the « calcari grigi » of the Lower Jurassic of Monte Baldo are described from a lithological and paleontological (incl. micropaleontological) standpoint.

CITA, M. B., 1959, *Stratigrafia micropaleontologica del Miocene Siracusano*: Boll. Soc. Geol. Italiana, vol. LXXVII, pp. 1-97, fig. 1-54.

A stratigraphic description of the Miocene sequence in the Siracusa region (Sicilia) is given, based upon micropaleontological research. Micropaleontological associations permit to distinguish the various Miocene stages from Aquitanian to Sarmatian. Descriptions are given of 35 out of the 228 foraminiferal species which have been identified.

CITA, M. B., 1960, *Guida allo studio della Micropaleontologia*. II edizione. «La Goliardica» ed., Milano, pp. 1532, tav. 1-35, fig. 1-198.

A manual to guide students to the study of micropaleontology. The book consists of three parts:
1) Practical part (methods of study etc.);
2) Descriptive part concerning animal and vegetal microfossils;
3) Stratigraphical part.

CITA, M. B., FORTI, A., RAFFI, G. & VILLA, F., 1959, *Jurassic and Cretaceous microfacies from the Prealps and Central Apennines (Italy)*: V World Petroleum Congress, Sect. I, Paper 54, pp. 1-32, fig. 1-7, tav. 1-20.

Four stratigraphic sections (in the Prealps of Lombardia and Veneto and in the Central Apennines) of Jurassic and Cretaceous age are described. All the examined sections are rich in microfossils. Good possibilities of correlation exist because of the presence of significant microfaunal assemblages and microfacies.

CITA, M. B. e GELATI, R., 1960, *Globoquadrina langhiana n. sp. del Langhiano-tipo*: Riv. Italiana Pal. Strat., vol. LXVI, n. 2, pp. 241-246, tav. XXIX, fig. 1.

A new species of *Globoquadrina* named *G. langhiana* is described from the type-region of the Langhian stage (Lower Miocene from Piemonte, Northern Italy). The new species is proposed as zonemarker for the lower part of the Langhian stage.

CITA, M. B. & PASQUARÈ, G., 1959, *Studi stratigrafici sul sistema Cretaceo in Italia. Nota IV: Osservazioni micropaleontologiche sul Cretaceo delle Dolomiti*: Riv. Italiana Pal. Strat., vol. LXV, n. 4, pp. 385-442, tav. XXV-XXVIII, fig. 1-6.

A micropaleontological description of samples coming from some localities of the Dolomiti near Cortina d'Ampezzo and Val Badia is given. The age of considered samples ranges from Dogger to probable Eocene; the greatest part is of Lower Cretaceous age. Six groups of assemblages have been distinguished in thin sections described and figured. Two new species are described.

CITA, M. B. & PREMOLI SILVA, I., *Globigerina bollii, nuova specie delle Langhe*: Riv. Italiana Pal. Strat., vol. LXVI, n. 1, pp. 115-126, tav. XIII, fig. 1-4.

A new species of *Globigerina* is described from the type-Langhian (Lower Miocene), with diagrams showing biometric variations and direction of coiling in specimens from different samples. This species is considered as zone-marker for the middle part of the Langhian stage.

CITA, M. B. & ROSSI, D., 1959, *Prima segnalazione di Aptiano-Albiano nelle Dolomiti*: Rendiconti Acc. Naz. Lincei, Cl. Sc. fis. mat. nat., ser. VIII, vol. XXVII, fasc. 6, pp. 405-411, fig. 1-2.

The Authors have found evidence of Aptian-Albian age for the first time in the Cretaceous sequence of La Stua-Campo Croce. The age's determination is based upon micropaleontological researches.

CITA, M. B. & RUSCELLI, M. A., 1959, *Cretaceous microfacies from western Pakistan and Afganistan*: Riv. Italiana Pal.

Strat., vol. LXV, n. 3, pp. 232-252, tav. VIII-XIII, fig. 1.

Microfacies of some samples from Western Pakistan with a very rich assemblage of Lower Cretaceous Orbitoline and from Afghanistan, with different assemblages of Upper Cretaceous age, are described. Samples have been collected by prof. A. Desio during the Karakorum expedition 1955.

COLACICCHI, R., 1958, *Sulla microradiografia dei foraminiferi*: Riv. Mineraria Siciliana. A. IV, n. 50, pp. 1-4.

The A. reports a method of contact microradiography useful in revealing the internal structure of whole foraminifera, described by R. H. Hedley in Micropaleontology, vol. 3, n. 1, 1957. The A. underlines the good results of this method.

DESIO, A., 1959, *Cretaceous beds between Karakorum and Hindu Kush Ranges (Central Asia)*: Riv. Italiana Pal. Strat. vol. LXV, n. 3, pp. 221-229, fig. 1.

Fossiliferous beds of some outcrops of Cretaceous age between the Karakorum and Hindu-Kush ranges are described. Besides the presence of many Mollusca, even that of some specimens of Foraminifera is signaled.

DIECI, G., 1957, *Foraminiferi del Tortoniano dell'Appennino modenese*: Atti Soc. Nat. e Mat. di Modena, vol. LXXXVII-LXXXVIII, pp. 1-14.

First results are exposed of a micropaleontological research concerning the Miocene of the Apennines in the provinces of Modena and Reggio Emilia. A detailed description of Tortonian deposits of Montegibbio and Castelvetro and a preliminary report on Upper Miocene of San Valentino (Reggio Emilia) are given.

DIECI, G., 1959, *I Foraminiferi tortoniani di Montegibbio e Castelvetro (Appennino modenese)*: Palaeontographia Italica, vol. LIV, (n. ser. XXIV), pp. 1-113, tav. I-VIII, fig. 1-2.

Two hundred nine species of Foraminifera from the Tortonian deposits of Montegibbio and Castelvetro are described and completely illustrated. Five species and subspecies are proposed as new ones: *Bolivina saxolensis* n. sp.; *Cibicides montanaruae* n. sp.; *Cibicides pseudoungerianus*

Cushman subsp. *dorsoconvexus* n. subsp.; *Karriella mutinensis* n. sp.; *Robulus subturgidus* n. sp. Quantitative investigations on both faunas allow the A. to state a depositional environment of open sea, near the shore, of high temperature for Montegibbio marls, and of a rather deeper conditions for the clay of Castelvetro.

FARINACCI, A., 1959, *Le microbiofacies giurassiche dei Monti Martani (Umbria)*: Pubbl. n. 41 Ist. Geol. Univ. Roma, pp. 1-61, fig. 1-4, tav. I-XVII.

A various range of biological associations pointed out through the knowledge of Jurassic microfacies of M. Martani has a great stratigraphic interest, over all for the finding of specimens which present a limited vertical distribution.

The microfaunas found out allow to recognize the formation of a sinking which took place little by little during all over Jurassic.

FERASIN, F. e RIGATO, S., 1957, *Studi sui Tintinnidi fossili delle Prealpi venete*: Mem. Acc. Patavina di Sc. Lett. Arti, Cl. Sc. Mat. e Nat., vol. LXIX, pp. 1-26, fig. 1-2, tav. I-II.

Samples from detailed series in the « Prealpi Venete » are examined. Assemblages of Tintinnidi allow to subdivide the « biancone » formation, very monotonous from the lithological standpoint.

FORTI, A., 1957, *Geologia e micropaleontologia dei dintorni di Montebello e Rocca Susella (Voghera)*: Boll. Soc. Geol. Italiana, vol. LXXVI, fasc. 1, pp. 24-27.

The results of geological and micropaleontological investigations are presented. Microfaunal assemblages from Upper Oligocene to Middle-Lower Pliocene have been recognized and studied.

FORTI, A., 1958, *Studi statistici in una microfauna aquitaniana dell'Appennino pavese-vogherese*: Riv. Italiana Pal. Strat., vol. LXIV, n. 4, pp. 350-358, tav. XVIII, Fig. 1-3.

Statistical studies on an aquitanian microfauna are exposed and summarized in microfaunal diagrams. The aquitanian age of the fauna is discussed.

FRANCHINO, A., 1958, *Studi stratigrafici sul sistema cretaceo in Italia. Il Flysch e la Scaglia della Brianza Orientale fra Olginate e Cernusco Montevecchio*: Riv. Italiana Pal. Strat., vol. LXIV, n. 1, pp. 49-64, tav. III-IV, fig. 1-2.

The A. illustrates some Upper Cretaceous and Paleocene outcrops from a part of Eastern Brianza (Lombardia). Upper Cretaceous is represented by the Flysch formation, lacking of fossils. Overhanging it is the « Scaglia » formation, Cretaceous and partly Eocene in age.

Foraminiferal assemblages of Maestrichtian age (with *Globotruncana stuarti*, *G. contusa*, ecc.), with an horizon with Orbitoids, *Siderolites* etc.; of Danian age (with *Globigerinas* and *Globigerinellas*) and of Paleocene age (with *Globorotalia aragonensis*, *G. crassula*) are recognized.

GIANNINI, E. & TAVANI, G., 1960, *Foraminiferi miocenici e pliocenici di un sondaggio effettuato in Val di Trossa (Toscana)*: Paleontographia Italica, vol. LV, (nuova serie vol. XXV), pp. 25-90, tav. I-IX.

One hundred sixty nine species of Foraminifera from a drilling core in the Trossa valley (prov. of Pisa) are described. The age is Messinian and Plaisancian, accordingly with the stratigraphic assumption on the « Neoautoctono » of the Tuscan Maremma.

GIANNINI, E. & TAVANI, G., 1960, *Una nuova specie di Cibicides del Terziario*: Atti della Soc. Toscana di Sc. Nat. Mem. ser. A, vol. LXVI, fasc. II, Anno 1959, pagine 418-421, tav. I-II. Pisa.

The new species *Cibicides bellincionii* is described and illustrated. The species has a great diffusion in the Pliocene and Miocene of Tuscany and Po valley. The Authors emphasize both in the description and in the photographic plates its wide range of variability.

GIANOTTI, A., 1958, *Deux facies du Jurassique superior en Sicilie*: Révue de Micropaléontologie, n. 1, A. 1, pp. 38-51, fig. 1-5, tav. 1-2.

Two different facies of Upper Jurassic of Sicily are described. The first one (W and SE Sicily) is represented by sediments of open sea with a very rich microfauna containing prevailing planctonic

individuals. The second one (N and NE Sicily) is represented by shallow-water sediments with reefoidal and lagoonal interbeds and scarce benthonic forms. Correlations are made with similar facies in Italy and Europe.

GIUNTA ILACQUA, M., 1957, *I foraminiferi calabriesi di Rometta superiore*: Riv. Italiana Pal. Strat., vol. LXII, n. 4, pp. 225-238, tav. 1 (XX), tab. I-II.

The microfauna of a sample collected from a marly formation in Rometta superiore (Messina) has been examined. Planctonic individuals are prevailing. The sedimentation environment is of not very deep sea and characterized by a rather cold climate.

LANTERNO, E. & ROVEDA, V., 1957, *Sur les couples des Nummulites*: *N. incrassatus* (B), *N. ramondiformis* (A) e *N. vascus* (B), *N. boucheri* (A): Archives des Sciences, Genève, vol. 10, fasc. 2, pp. 137-170, tav. I-II.

The Authors define the paleontological characters of *Nummulites vascus* Joly and Ley. and of its megaspheric form *N. boucheri* de la Harpe, comparing them with *N. incrassatus* de la Harpe. The re-exhumation of the name of *N. incrassatus* for microspheric forms and the re-exhumation of the name *N. ramondiformis* de la Harpe for the megaspheric ones are proposed. A defined distinction between the two groups is of high stratigraphic interest.

LIPPARINI, T., 1957, *Foraminiferi cretacei della struttura di Monteveglio (App. bolognese)*: Boll. Serv. Geol. Italiano, vol. LXXIX, fasc. 1, pp. 327-348, fig. 1, tav. I-II.

A Cretaceous microfauna is examined from the structure's nucleus of Monteveglio. The results of micropaleontological investigations should support the Author's opinion on the presence of a transitional facies between the marly-calcareous « umbro-marchigiana » facies (occurring in the underground of the near Po valley) and limestone-arenaceous « etruscan » facies (Tuscan-emilian Apennines, S of this zone).

LUCINI P., 1958, *Su due microfaune del flysch del versante tirrenico della Basilicata*: Boll. Soc. Geol. Italiana, vol. LXXVII, fasc. 3, pp. 173-181, fig. 1-4.

The most significant forms are described, of two microfaunal assemblages from the « flysch » of west Basilicata (*Thalmanninella-Rotalipora-Globotruncana* etc.). The stratigraphic importance of the faunas is discussed.

LUCINI, P., MASPERONI, L. & SPADA, L., 1957, *Dati micropaleontologici sul flysch del versante tirrenico della Basilicata ed osservazioni sulle rocce ignee basiche del M. Cerviero nell'Appennino calabro-lucano*: Boll. Soc. Geol. Italiana, vol. LXXVI, fasc. 1, pp. 1-16, fig. 1-5.

The presence of Cretaceous-Eocene foraminiferal faunas is for the first time identified in the Flysch of Southern Basilicata, with prevailing arenaceous and planctonic individuals.

MARTINIS, B., 1957, *Osservazioni stratigrafiche sul sottosuolo di Lignano (Udine)*: Riv. Italiana Pal. Strat., vol. LXIII, n. 3, pp. 159-178, fig. 1, tav. 1.

A micropaleontological examination of samples of a series of terrains crossed by a water well, 366 m deep, drilled at Lignano, in the low plain of Friuli, leads to some remarks concerning their environmental conditions and chronology. A comparison is made between these samples and some coeval ones. Of particular interest is the fact that the Calabrian is for the first time identified in Friuli.

MASELLA, L., 1959, *Una nuova specie di Heterohelix del Cretaceo della Sicilia*: Riv. Min. Siciliana, A. X, n. 55, pp. 1-3, fig. 1-8.

A new species of *Heterohelix*, named *H. digitata* is described from the Cretaceous of Peloritan Mountains (Sicily).

MASELLA, L., 1960, *Le Schackoine (Foraminifera Globigerinacea) del Cretaceo di Patti (Messina)*: Riv. Min. Siciliana, n. 61, pp. 1-17, fig. 1-41, tav. 1-10.

The examination of a Schackoia's assemblage from Upper Cretaceous of Sicily allows to state (on the base of determination of transitional individuals) that many forms described from Aa. as species, have to be considered instead only as subspecies.

MEDIOLI, F., 1960, *La microfauna ad Ostracodi del Calabriano di Talignano Val Taro (Parma)*: Atti Soc. Italiana di Sc. Nat. Milano, vol. XCIX, fasc. II, pp. 209-220, fig. 1-2.

Forty seven species of Ostracods have been found in some samples from Talignano Val Taro (Parma). It is not possible to fix the exact Quaternary-Pliocene boundary on the basis of the microfaunal assemblage. The microfauna shows many similarities with the Ostracod's microfaunas of Calabrian age of the Romagna (Ruggieri).

MONCHARMONT ZEI, M., 1957, *Foraminiferi e Molluschi di un livello tirreniano presso Nova Siri Scalo (Matera)*: Boll. Soc. Nat. Napoli, vol. LXVI, pp. 1-19, tav. I-III.

The macro- and microfauna are described of a sample from a coastal terrace of Tirrenian age near Nuova Siri Scalo (Matera). The microfauna signifying a temperate-warm climate, allows to suppose a deposition during an interglacial time.

MONCHARMONT ZEI, M., 1957, *Ittioliti e Foraminiferi delle argille pleistoceniche di Taranto*. Atti. Mus. Civ. Sc. Nat. Trieste, vol. XXV, fasc. 1, n. 1, pp. 1-26, fig. 1, tav. I-VI.

The Sicilian age of the ittiolites clays of Taranto based till now only on the ittiofauna is here confirmed by the results of micropaleontological investigations on a foraminiferal fauna.

MONCHARMONT ZEI, M., 1960, *Contributo alla conoscenza del Pleistocene della Sicilia*: Boll. Soc. Nat. in Napoli, vol. LXIX, pp. 141-186, tav. I-XIV.

The A. describes the Quaternary (Siciliano) macro- and microfauna of a sample from « contrada Critazzu » near the road Siracusa-Floridia (Sicily). One hundred ninety-four species have been determined, among them 2 new species: *Rectuvigerina cylindroides* n. sp. *Rectuvigerina raricosta* n. sp.

MONTANARO GALLITELLI, E., 1957, *A revision of the foraminiferal Family Heterohelidae*: U. S. Nat. Museum Bull. 215, Smithsonian Institution, Washington, D. C., pp. 133-154.

A critical revision of the Cushman's Family Heterohelcidae has been carried out in the U. S. National Museum in Washington. Twenty-two genera have been revised: of the type species 11 are studied on the holotypes, 7 on paratypes, 5 on hypotypes. Other congeneric species related to these species have also been restudied when necessary. Attention has been paid to 1) coiling in the early stage, 2) arrangement of chambers in neanic and adult stages (acceleration, etc.), 3) presence, development and shape of the toothplate. Dissecting method has been applied to investigate the occurrence of toothplate, which has first recognized and demonstrated in *Eouvigerina* and *Pseudouvigerina*. The genera *Guembelina* Egger (= *Heterohelix* Ehrenberg), *Rectoguembelina* Cushman (= *Tubitextularia* Sulc), *Ventilabrella* Cushman (= *Planoglobulina* Cushman), *Bronnimannella* Montanaro Gallitelli (= *Pseudotextularia* Rzehak) are invalidated.

Only nine of the 23 genera examined — that is *Guembelitria*, *Guembelitriella*, *Heterohelix*, *Pseudoguembelina*, *Tubitextularia*, *Racemiguembelina*, *Gublerina*, *Planoglobulina*, *Pseudotextularia* — are stated as morphologically interrelated in the family Heterohelcidae. The remaining genera are proposed to be placed in different foraminiferal families and superfamilies.

MONTANARO GALLITELLI, E., 1958, *Specie nuove e note di Foraminiferi del Cretaceo superiore di Serramazzoni (Modena)*: Atti e Mem. dell'Acc. di Sc. Lett. e Arti di Modena, ser. V, vol. XVI, pp. 1-28, tav. I-IV.

Thirty-nine species of foraminifera are here described and illustrated. Seven of them are new species: the microfauna was contained in a sample from the locality of Serramazzoni (Apennines of Modena) and indicates an Upper Cretaceous age (Campanian-Maestricht.). Planctonic individuals are prevailing. The Serramazzoni's formation was indicated as Eocene at that time in the official Italian geological map.

MONTANARO GALLITELLI, E., 1959, *Globotruncane campaniano-maestrichtiane nella formazione a facies di flysch di Serramazzoni nell'Appennino settentrionale modenese*: Boll. Soc. Geol. Italiana vol. LXXVII, pp. 171-191, fig. 1, tav. I-III.

Eight species of Globotruncanas from calcareous-arenaceous beds of the Serramazzoni's formation (Northern Apennines) are described and illustrated. Micropaleontological investigations 1) recognize the richest foraminiferal fauna in the Up-

per Cretaceous flysch of Apennines, 2) state that the age of the examined horizons is Campanian-Maestrichtian, 3) that the Globotruncanas are well represented, with decadent species and subspecies.

MONTANARO GALLITELLI, E., 1959, *Nuovi reperti e riesame paleontologico-stratigrafico delle arenarie « stampiane » dello Scandianese (Appennino settentrionale modenese-reggiano)*: Rendiconti dell'Acc. Naz. dei Lincei Clas. Sc. fis. mat. e Nat. ser. VIII, vol. XXVI, fasc. 3, pp. 1-4.

A microfaunal assemblage, very rich of species and individuals, contained in a sample collected in the M. Babbio formation is in course of being studied. From a first investigation is already possible to state a Priabonian-Lower Oligocene age for the « molasse » formation of M. Babbio. Till now the formation was dated as Oligocene (Stampiano).

OGNIBEN, L., 1958, *Melobesia bassa elveziana di Caiazzo (Caserta)*: Palaeontographia Italica, vol. LIII (n. ser. XXIII), pp. 50-73, tav. XXVIII.

Twelve Melobesiae species (distributed among four genera) from the organogenic-calcareous formation at the bottom of the transgressive Miocene series (Lower Elveziano) in the Caiazzo (Caserta) area are described. Some species known from the literature are submitted to critical revision, and discussion is given of some synonymies and of the stratigraphic position of some Melobesiae deposits from the literature.

OGNIBEN, L., 1958, *Stratigrafia e microfauna del terziario della zona di Caiazzo (Caserta)*: Riv. Italiana Pal. Strat. vol. LIV, n. 2-3, pp. 89-270, tav. VIII-XV.

Stratigraphic study of the Tertiary formations of the Caiazzo (Caserta) area has been completed from the micropaleontological investigation in every formation. Deposits of Tortonian-Helvetian-Langhian-Oligocene age have been identified. The tectonic transportation of both allochthonous and parautochthonous complexes in their actual positions did not happen before late Tortonian time.

PANSERI, C. & BARSOTTI, G., 1959, *Conodontos y Ostracodos devonianos de la region de Semara (Sahara espagnol)*: Notas y Comunicaciones del Inst. Geol. y Minero de Espana. N. 55, pp. 145-176, fig. 1, tav. I-IV.

Micropaleontological study of a fairly rich microfaunistic assemblage of Conodonts and Ostracods separated from samples collected in the Spanish Sahara (Rio de Oro) shows their importance in a detailed stratigraphy of the Devonian of this area and in a possible correlation with other North Africa basins. Ten genera and 14 species of Conodonts, and 13 genera of Ostracods were recognized.

PAPI, F. & TAVANI, G., 1959, *Sulla presenza di alcuni foraminiferi nell'acqua di una sorgente delle terme di Montecatini*: Atti Soc. Toscana Sc. Nat., ser. B; vol. LXVI, Pisa, pp. 1-9, fig. 1-3.

The presence of some Foraminifera among a faunal assemblage found in a thermo-mineral water source at Montecatini Terme is emphasized. The Authors suppose they represent the relictus of a marine fauna which firstly accustomed to a brackish environment, then took refuge in the mineral water of Montecatini.

PERIN, G., 1960, *Studio di una microfauna paleogenica di Teolo nei Colli Euganei*: Mem. Acc. Patavina SS. LL. AA.: Cl. Sc. Mat. Nat. vol. LXXII (1959-60), pagine 156-167.

The microfauna from a sample of marls outcropping near Teolo (« Euganei » hills, Padova) indicates an Upper Eocene age (the outcrop had been attributed to the Lower Eocene by Fabiani, and to the Lower Oligocene by Squinabol and Hantken). A comparison is made with some other Upper Eocene association. The A. supposes an environment of sedimentation far from the coast.

PIERFEDERICI, W., 1958, *Descrizione di una microfacies pelagica ad alghe filamentose dei monti Lucretili*: Ist. Grafico Tiberino, Roma, pp. 1-11, tav. I-V, Pubbl. n. 28, anno VII dell'Ist. Geol. dell'Univ. di Roma.

A pelagic linear sea-weed microfacies of Lucretili Mountains is described. Nature of linear forms and minute spheres similar to *Globochaeta alpina* Lombard and *Eotrix alpina* Lombard and sections of little pelagic Molluscan shells are particularly examined, in order to try to fix differential characters useful for their identification.

POZZI, R. & VILLA, F., 1959, *Contributo allo studio stratigrafico della serie permotriassica del M. Marzola (Trento)*.

Pt. I: Studio micrografico (Pozzi). Pt. II: Studio micropaleontologico (Villa): Riv. Italiana Pal. Strat., vol. LXV, n. 2, pp. 97-130, fig. 1, tav. II-IV.

Two hundred eight thin sections and 6 residues from samples collected in the Permian-Triassic series of M. Marzola (Trento) have been examined. The most interesting sections are widely described. Among the most interesting thin sections, a primitive *Fronicularia* and an Ammodiscidae association are described.

PROTO DECIMA, F., 1960, *Nuova specie di Bolivina nel Tortoniano del Veneto*: Rendiconti Acc. Naz. Lincei, ser. VIII, vol. XXVIII, fasc. 6, pp. 889-892 della Cl. Sc. Fis. Mat. e Nat.

A new species of Bolivina: *B. ferasini* is described and illustrated, from Tortonian marls near Asolo (Treviso, North Italy).

RAFFI, G. & FORTI, A., 1959, *Micropaleontological and stratigraphical investigations in « Montagna del Morrone »* (Abruzzi, Italy). Revue de Micropaleontologie, vol. 2, n. 1, pp. 8-20, fig. 1-3, tav. I-II, tab. 1.

Three stratigraphic sections in the Mesozoic rocks of the Morrone Mountain area (Central Apennines) are described. The sequence of faunistic assemblages from Lias to Miocene is discussed and exposed, with their lithological and environmental characteristics and their microfacies with their probable correlations.

REGGIORI G., 1958, *Studi stratigrafici sul sistema Cretaceo in Italia. Gli affioramenti cretacei della zona nord-occidentale del Lago di Varese*: Riv. Italiana Pal. Strat., vol. LXIV, n. 1, pp. 27-46, fig. 1, tav. I-II.

Cretaceous outcrops of the western part of the Lake of Varese are described, the age of which extends from Neocomian to Upper Cenomanian. The lower part of Cretaceous (Neocomian-Barremian) is characterized (from a micropaleontological standpoint) by an association rich in Radiolaria and Tintinnidae. Stages from Aptian to Cenomanian by the « Scaglia » formation, with *Globigerina*, *Ticinella*, *Rotalipora*, *Globotruncana* ecc. The Flysch formation of Upper Cenomanian to Lower Turonian, with *Globotruncana*, follows.

ROVEDA, V. 1959, *Nummulites retiatius, nouvelle espèce de Nummulite reticulée des Abruzzes (Italie)*: Revue de Micropaléontologie, n. 4, vol. 1, pp. 201-207, tav. 1.

A new species of a little reticulated Nummulites (*N. retiatius*) from Lower Oligocene of Majella (Abruzzo) is described.

RUGGIERI, R., 1960, *Segnalazione di Globoquadrina altispira nei trubi di Bonfornello (Palermo)*: Riv. Min. Siciliana, n. 61, pp. 1-7, fig. 5

Many specimens of *Globoquadrina altispira globosa* Bolli have been found in the «trubi» of Bonfornello (Palermo), of ascertained Lower Pliocene age. The vertical distribution of the gen. *Globoquadrina* limited till now to Oligocene and Miocene must be therefore extended to the Lower Pliocene.

RUGGIERI, G., 1960, *Ostracofauna miocenica del Ragusano*: Riv. Miner. Siciliana. Anno XI, maggio-giugno 1960, n. 63, pp. 1-7, tav. I-II.

An ostracofauna is described from a sample of white marls outcropping in the Ragusa region (F. 276/III/NE, VA 6463.7164, q. m. 35 s.m.).

The chronological attribution to the Middle-Lower Miocene is based on the foraminiferal association.

In the ostracofauna five species are described and illustrated as new: *Hermanite* (?) *pirata* n. sp.; *Ruggieria palpebralis* n. sp.; *Pterygocythere* (?) *iblea* n. sp.; *Bythoceratina* (?) *aviformis* n. sp.; *Bythoceratina* (?) *vandelboldi* n. sp.

SANTINI, L., 1957, *Studi stratigrafici sul Terziario subalpino lombardo*: Riv. Italiana Pal. Strat. vol. LXII, n. 4, pp. 239-264, fig. 1-2, tav. XXI-XXIII.

The ages of two levels of the conglomerate of Como (Gonfolite) are easily determined indirectly for their stratigraphic position. The first of them, near Como, is interposed between the underlying clay-marl of the Lower Oligocene and the clay-marl with a foraminiferal assemblage of Upper-Middle Oligocene age. The second one is found between the beds of Lucinasco and those of Civello of the Lower Miocene.

SARTONI, S. & CRESCENTI, U., 1960, *La zona a Palaeodasycladus mediterraneus*

(Pia) nel Lias dell'Appennino meridionale: Giornale di Geologia, Bologna, ser. 2, vol. XXVII, 1956, pp. 1-25 figure 1-2, tav. I-III.

The lithostratigraphic and micropaleontological features are described of a new biostratigraphic unit (ascribed to Lias) named «*Palaeodasycladus mediterraneus* (Pia) Zone» spread out in the Southern Apennines, in the Venice and Trento districts. Stratigraphic series of Serra del prete (M. Pollino, Cosenza) and of M. Monaco di Gioja (Matese, Benevento) are described, being the last one choosed as typical series.

SOCIN, C. & DROOGER, C. W., 1959, *Miocene foraminifera from Rosignano, northern Italy*. Micropaleontology, vol. 5, n. 4, pp. 415-426, pls. 1-2, fig. 1, tab. 1-2

In the region of the classic locality of Rosignano, the highly developed *Lepidocyclina tournoueri* is accompanied by *Miogypsina globulina*. The associated planctonics mainly consist of *Globoquadrina dehiscens* and *Globigerina globularis* with scarcer *Globigerinoides triloba*. The Burdigalian age of this fauna shows the persistence of the Lepidocyclinidae in the Miocene of the Mediterranean area.

TACOLI LUCCHI, M. L., 1960 *Alcuni aspetti della fauna triassica a Foraminiferi degli strati di S. Cassiano, Alpi orientali*: Rendiconti Acc. Naz. Lincei, ser. VIII, vol. XXVIII, fasc. 5, pp. 1-3 della Cl. Sc. Fis. Mat. e Nat.

A microfaunal assemblage rich in foraminifera from samples of the S. Cassiano horizon (Middle Upper Triassic) is in course of being studied. Some new forms have been observed. Nodosariidae are prevailing in the assemblage.

TACOLI M. L. & ZOJA, L. 1957, *L'età degli scisti silicei di S. Fele*: Boll. Soc. Geol. Italiana, vol. LXXVI, pp. 1-12, fig. 1-6.

Thin sections have been examined from samples collected in a stratigraphic series of the «scisti silicei» of S. Fele (Avellino). The presence of *Trocholina elongata* Leup. a. Bigler and *Coscinoconus alpinus* Leup. a. Bigler allows to state the Lower Cretaceous age of the «scisti silicei» previously assigned to the Triassic age.

TAMAJO, E. 1960, *Microfacies mesozoiche della Montagna della Busambra (Sicilia)*:

Riv. Min. Siciliana, n. 63, pp. 1-20, fig. 1-14.

Microfacies of a Mesozoic sequence sampled in the Busambra Mountain (W. Sicily) are described. This sequence ranges from the Lower Lias to the Senonian, while Upper Lias and Lower Dogger are absent. A lower part with reefoidal facies and an upper one with pelagic facies (biostroma) have been distinguished.

TAVANI, G., 1958, *Osservazioni su alcune specie di Foraminiferi del Miocene superiore*: Atti Soc. Toscana di Sc. Nat., ser. A, vol. LXV, pp. 1-14, tav. I.

Some Upper Miocene foraminiferal species, formerly described and illustrated by the Author, are here re-described and re-illustrated. Variability range of *Bolivina dentellata* Tavani and abnormal growth in specimens of *Bulimina echinata* d'Orb. are emphasized and paleoecologically discussed.

TEDESCHI, D., 1959, *Campi gassiferi padani*. Stratigrafia padana. Sintesi: Atti Convegno Milano (30/9-5/10/57) su Giac. gass. Eur. Occ., vol. II, pp. 7-15, tavole I-XII.

An outline of stratigraphy and paleogeography of Po river basin (assumed in the whole as a single stratigraphical province) from Upper Trias to Quaternary is given. Some reference is made to outcrops in the Alps and in the Apennines. The stratigraphic study was carried out mainly on the basis of Foraminifera. For each stage a description is given of the most typical microfaunas and microfacies as well as of the main biozones.

A photographic documentation is also given of most typical microfacies and faunizones obtained from well samples.

TEDESCHI, D. & ZANMATTI, C., 1957, *Diagnosi di forme nuove Marginulina cherenensis n. sp.* *Bulimina aculeata d'Orb. var. basispinosa n. var.*, *Bulimina aculeata d'Orb. var. minima n. var.*, *Bolivina dentellata Tavani var. parva n. var.*, *Bolivina jriensis n. sp.*, *Bolivina placentina n. sp.*, *Gyroidina longispira n. sp.*, *Gyroidina longispira n. sp. var. miocenica n. var.*: Riv. Italiana Pal. Strat., vol. LXIII, n. 4, pp. 247-254, fig. 1-8.

Four new species and four new subspecies of Foraminifera are described and illustrated.

VILLA, F., 1960, *Un livello a Coproliti nel Retico del Monte Resegone*: Ist. Lombardo di Sc. Lett., Milano, pp. 83-86, tav. I.

Cretaceous coprolithes have been found in a calcareous bed of the Middle-Rhaetic formation of M. Resegone (N. Italy). They are probably different from Coprolithes described and illustrated by Parejas as *Coprolithus salevensis*.

VILLA, F. & PIZZOCHERO, M. L., 1958, *Osservazioni stratigrafiche e micropaleontologiche preliminari sulle serie oligomioceniche della Val del Lemme e del torrente Orba*: Boll. Soc. Geol. Italiana, vol. 77, fasc. 3, pp. 7-10.

Some preliminary micropaleontological data are exposed of two series sampled in the Lemme Valley and between T. Orba and T. Piota (Piemonte). Both the series are rich of microfaunas with characteristic assemblages which allow to identify Oligocene, Aquitanian and Langhian age.

VITERBO, I., 1958, *Sull'età di alcuni lembi di «Flysch» del Massiccio del Matese (Appennino meridionale)*: Boll. Serv. Geol. d'Italia, vol. LXXIX, fasc. 3-4-5, pp. 541-553, tab. 1.

Microfaunas have been examined from samples collected from two sheets of flysch (argille scagliose) left on the calcareous-dolomitic massif of the Matese (NW of Castello d'Alife). The mixing of faunas of different ages and facies, from Oligocene to Upper Miocene and perhaps Lower Pliocene, have been evidenced. On the contrary the scarce microfauna of the arenaceous marls overlaid by the flysch near S. Gregorio does not show traces of mixing.

ZANFRÀ, S., 1959, *Considerazioni micropaleontologiche sulle argille tortoniane dei dintorni di Capranica Prenestina e di Bellegra (Lazio)*: Pubbl. n. 33 Ist. Geol. Univ. Roma, pp. 1-7, fig. 1-2, tav. 1.

Micropaleontological investigations made on the clays between the Helvetian limestones and

the Tortonian-Pontian sandstones which extend between the Prenestine Mountains on the West and the Bellegra Mountains on the East, allow to date them to the Tortonian age.

ZINONI, A., 1958, *Microfaune plioceniche del Golfo di Orosei (Sardegna)*: Riv. Ita-

liana Pal. Strat., vol. LXIV, n. 1, pp. 65-74, tav. 1 (V).

Three fossiliferous samples of Neogenic age from Sardegna contain a foraminiferal assemblage rich in genera and species (66 forms on the whole). According to the presence of several significant species, the age is determined as Pliocene and environmental conditions are indicated as sublittoral.