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Neocouperipollis—A new name for *Couperipollis* Venkatachala & Kar

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Kar, R. K. & Kumar, Madhav (1986). *Neocouperipollis*—A new name for *Couperipollis*. *Palaeobotanist*, **35** (2) : 171-174.

Venkatachala and Kar instituted *Couperipollis* in 1969 selecting *Monosulcites perspinosus* Couper (1953) as the type species. Couper did not provide photograph for this species but instead gave a line drawing showing oval shape, well-developed colpus and spines with bulbous base and pointed tip. Later workers could not locate this or any other specimen from the slides made by Couper as per his diagram. Location of a pollen as per illustration of Couper from other localities of the same formation was also not fruitful and only polyporate forms comparable to extant Asteraceae or Malvaceae could be found *Couperipollis* recorded from Palaeocene-Eocene of India are monocolpate and spinose and are not related to Asteraceae or Malvaceae, so a new genus, viz., *Neocouperipollis* is proposed here to accommodate them.

Key-words—Palynology, *Neocouperipollis*, Palaeocene-Eocene, India.

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सारांश

काउपेरिपॉलिस वेंकटाचाला व कर का एक नवीन नाम–निओकाउपेरिपॉलिस

रंजीत कुमार कर एवं माधव कुमार

वेंकटाचाला एवं कर ने 1969 में मोनोसल्काइटिस पर्सपाइनोसस काउपर (1953) प्रारूप प्रजाति का चयन करके काउपेरिपॉलिस स्थापित किया था। काउपर ने इस जाति का छायाचित्र नहीं दिया था बल्कि इसके बजाय उन्होंने एक अंडाकार, सुविकसित विदरक तथा कंदीय आधार एवं नुकीले अग्रभाग पर कंटक प्रदर्शित करते हुए एक रेखाचित्र दिया था। अन्य शोध-कर्त्ता काउपर द्वारा बनायी गई स्लाइड़ों से उनके रेखाचित्र के अनुसार इस प्रकार का प्रादर्श ढूंढने में असफल रहे। काउपर के चित्र के अनुसार इसी शैल-समूह के अन्य स्थानों से भी इस प्रकार का प्रादर्श उपलब्ध नहीं हो पाया है तथा वर्तमान ऐंस्टेरेसी अथवा माल्वेसी कुलों से तुलनीय केवल बहुमुखकी प्ररूप ही उपलब्ध हो सके हैं। भारत के पुरानूतन-आदिनूतन कल्प से अभिलिखित काउपेरिपॉलिस कंटकयुक्त एवं एकमुखकी हैं तथा माल्वेसी अथवा ऐंस्टेरेसी कुलों से सम्बद्ध नहीं हैं अतएव इन प्ररूपों हेतु निओकाउपेरिपॉलिस नामक एक नव प्रजाति प्रस्तावित की गई है।

MONOCOLPATE spinose pollen recovered from a bore core sample representing the Lower Eocene, (Naredi Formation), in Kutch formed the basis for the designation of *Couperipollis* by Venkatachala and Kar (1969). Comparable pollen had earlier been recorded by Couper (1953) from Lower Maxwell Formation of Pliocene age, New Zealand. Venkatachala and Kar (1969) instituted *Couperipollis* with the following diagnosis: "Pollen grains subcircular, oval or elliptical in shape. Monosulcate, sulcus well developed, mostly extending from one margin to other. Exine ornamented with verrucae, bacula and spines". *Couperipollis perspinosus* (Couper) Venkatachala & Kar was chosen by them as the type species. A detailed study of *Couperipollis* was made by Thanikaimoni, Caratini, Venkatachala, Ramanujam and Kar (1984) while preparing the atlas of "Selected Tertiary angiosperm pollens from India and their relationship with African Tertiary pollens". This note stems out from deliberations of this workshop.

Saxena (1980) recorded *Couperipollis* from Palaeocene while Venkatachala and Kar (1969) and Sah and Kar (1970) recovered them from Eocene of Kutch. Sah and Dutta (1966, 1968), Dutta and Sah (1970), Singh and Singh (1978) proposed several species of this genus from the Palaeocene of Meghalaya. Sah and Kar (1974) recorded the genus from Eocene of Rajasthan while Baksi and Deb (1981) recorded the genus from the Eocene sediments of Bengal.

Erdtman (1947) proposed *Monosulcites* for laevigate, monocolpate pollen but Couper (1953) emended this genus to include free, anisopolar, bilateral monosulcate pollen with elongate to subcircular shape

and with variable exine thickness and sculpture.

This emendation of *Monosulcites* by Couper (1953) was not considered tenable because both the laevigate and spinose monocolpate forms are classed together. To circumvent this heterogeneity, Venkatachala and Kar (1969) erected a new genus *Couperipollis* with *Monosulcites perspinosus* (Couper) as the basionym of the type species *C. perspinosus* (Couper) Venkatachala & Kar. The type locality of *Monosulcites perspinosus* is Nukumaru beach, near Wangaui, Lower Maxwell Formation of Pliocene age. According to Couper (1953), the type specimen of *M. perspinosus* is L 43 but according to Norris (1962) and Pocknall and Mildenhall (1984) subsequent search in the type slide and other preparations made by Couper has not resulted into finding of the type specimen. The only spinose pollen that could be seen in the preparations are pollen comparable to extant Asteraceae or Malvaceae. Pocknall and Mildenhall (1984) remark that no original unprocessed material of Couper's collection remains and the sea has swallowed the exposures from where he originally collected the samples. While instituting the species, Couper (1953) did not illustrate his taxon with a photograph but instead provided a line drawing depicting the oval shape, well-developed colpus and spines with bulbous base and pointed tip.

Location of a pollen as per illustration of Couper from other localities, in the opinion of Pocknall and Mildenhall (1984), was also not fruitful. So they concluded that Couper's *Monosulcites perspinosus* could at best be a folded specimen with Malvaceae-like spines in which the pores are probably hidden in the folds. In such a case, even if *M. perspinosus* is subsequently found, *Couperipollis* then, in the opinion of Pocknall and Mildenhall (1984), would be a synonym of *Tubulifloridites* (Cookson) Potonié, *Malvacipollis* Harris or *Malvaceaerumpollis* Nagy. They therefore advocate that the genus *Couperipollis*, based on a drawing of a wrongly diagnosed specimen that no longer exists, should be abandoned. Abandoning the name of *Couperipollis* as suggested by Pocknall and Mildenhal (1984) alone would, however, not solve the taxonomic tangle. Some of the species of *Couperipollis* described from the Lower Tertiary of India are definitely monocolpate and spinose. They have no relation to the pollen grains of Asteraceae or Malvaceae but are closely akin to Arecaceae. These species are to be suitably accommodated either in an existing genus or a new one.

Mathur (1966) proposed *Echimonocolpites* for the spinose, monocolpate pollen and the hitherto known various species of *Couperipollis* should normally be placed within it. However, *Echimonocolpites* Mathur (1966) is a junior synonym of *Echimonocolpites* van der Hammen & de Mutis (1965). Prior to the proposition of *Echimonocolpites*, van der Hammen (1954) originally instituted *Monocolpites* for similar type of pollen and in 1956 he selected the pollen of *Orthrosanthus multiforus* Sweet an extant pollen as the lectotype for the genus. Since this species has already been named as the type species of *Orthrosanthus* Sweet the proposal of van der Hammen was regarded as invalid. Van der Hammen and de Mutis (1965) subsequently proposed *Echimonocolpites*—a new genus for those pollen and selected the type species from a new combination based on illegitimate *Monocolpites rudae*. This time, they however, validated it with a nomenclaturally acceptable holotype. This treatment is again not in accordance with the International Code of Botanical Nomenclature because this new combination does not provide full and direct reference to the basionym (Catalog Fossil Spores Pollen, vol. 34, p. 247). Nicolson (personal communication with Thanikaimoni) also corroborates that *Echimonocolpites* van der Hammen & de Mutis (1965) is validly published although the appropriate combination in *Echimonocolpites* has not (yet ?) been validated. Since a taxon name once rejected as illegitimate following the International Code of Botanical Nomenclature can not be used again for a new combination except by conservation, *Echimonocolpites* is regarded here as invalid.

Arengapollenites Kar (1985) resembles *Couperipollis* in monocolpate and spinose disposition but the spines in *Arengapollenites* are closely placed on two margins of the colpus in alternate fashion so that they interlock the aperture on invagination. This character is typical to the extant *Arenga* pollen and *Arengapollenites* was proposed by Kar (1985) to accommodate dispersed fossil pollen comparable to *Arenga*. In *Couperipollis*, the spines are not arranged in any special manner in apertural region and thus is easily distinguished from *Arengapollenites* Kar (1985).

As there is no suitable genus which could accommodate some of the species described under *Couperipollis*—a new name, viz., *Neocouperipollis* is proposed here with the following generic diagnosis made after an indepth study by Thanikaimoni, Caratini, Venkatachala, Ramanujam and Kar (1984).

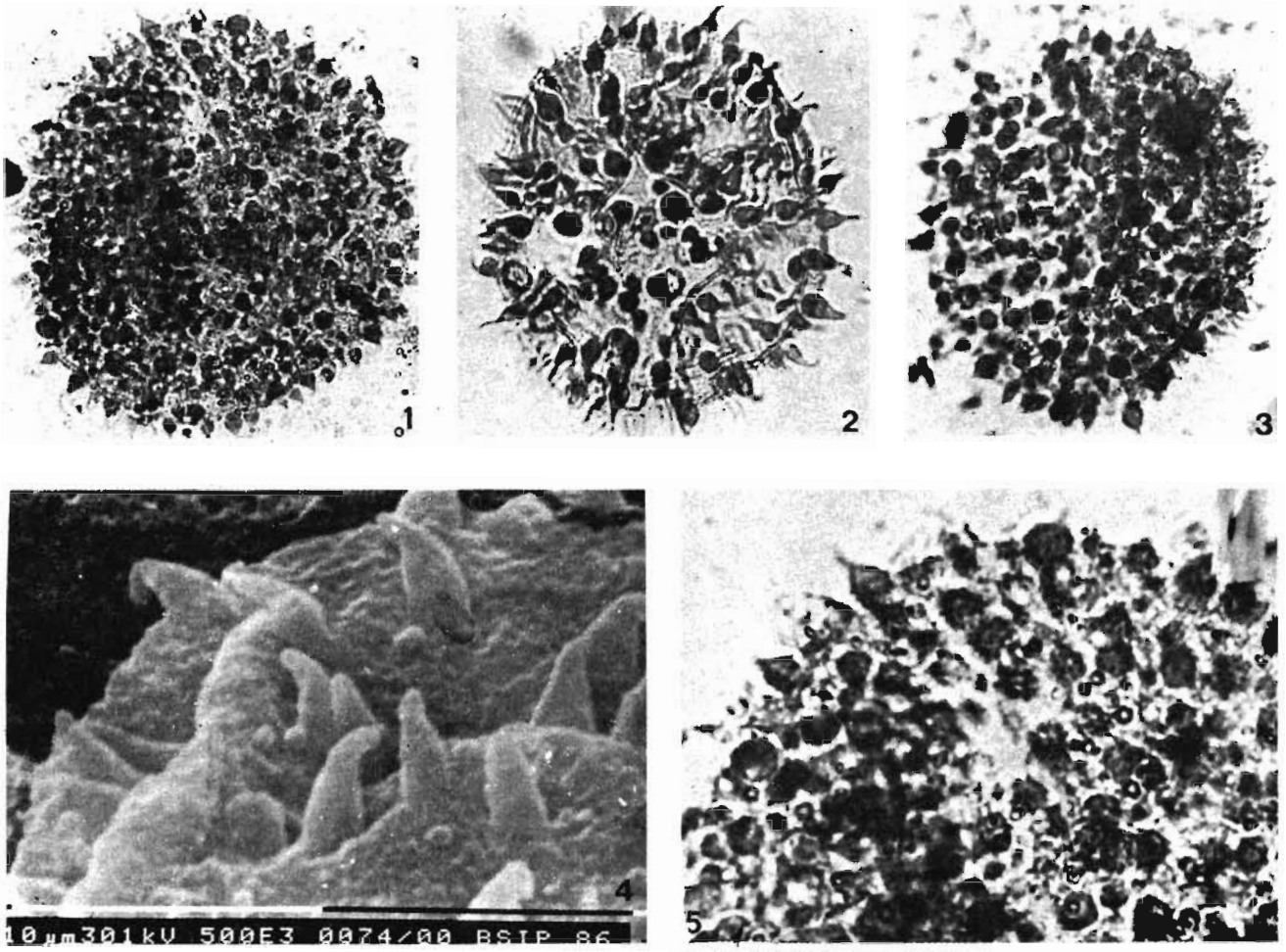
Genus—*Neocouperipollis* gen. nov.

Type Species—*Neocouperipollis* (*Couperipollis*) *kutchensis* (Venkatachala & Kar) comb. nov.

Diagnosis—Pollen grains more or less elliptical in polar view, monosulcate, echinate, sulcus extending from one end to the other along the longest axis, spines pointed with nexinal thickening at the base, exine more or less smooth between the spines.

Neocouperipollis (*Couperipollis*) *kutchensis* (Venkatachala & Kar) comb. nov.

1969 *Couperipollis kutchensis* Venkatachala & Kar, p. 161, pl. 1, figs. 15-16.



Figures 1, 2, 5—*Neocouperipollis kutchensis* (Venkatachala & Kar) comb. nov. : 1, 5,Holotype, fig. 1 magnified to *ca.* × 1000 and fig. 5 *ca.* × 2000. Note the colpus in the middle region. Fig. 2 magnified to *ca.* × 1000.

Figure 3—*Neocouperipollis kutchensis* (Venkatachala & Kar) comb. nov. magnified to *ca.* × 1000. Note the spines with bulbous base and pointed tip.

Figure 4—SEM photograph of *Neocouperipollis kutchensis* (Venkatachala & Kar) comb. nov.

Emended Diagnosis—Pollen grains more or less subcircular to oval in shape, 35-65 × 30-60 µm. Monosulcate, exine spinose, spines strongly built with bulbous base and pointed tip, interspinal space more or less laevigate to granulose.

Holotype—Venkatachala and Kar, 1969, pl. 1, fig. 16, size 50 × 48 µm, slide no. 3315, V 34 (England Finder reading).

Remarks—Venkatachala and Kar (1969) mentioned the slide number of the holotype as 3314. However, the correct number of the slide is 3315.

Type Locality—Bore-hole core no. 14, Naredi Formation, Lower Eocene, Kutch.

The following species of *Couperipollis* were also emended by the authors and are here transferred to *Neocouperipollis.*

Neocouperipollis (*Couperipollis*) *achinatus* (Sah & Kar) comb. nov.

Holotype—Sah and Kar, 1970, pl. 1, fig. 8, size. 42 × 30 µm, slide no. 3351.

Diagnosis—See Sah and Kar, 1970, pp. 130-131.

Neocouperipollis (*Monosulcites*) *magnus* (Dutta & Sah) Kar & Kumar, 1986

Neotype—Kar & Kumar (1987), pl. 4, fig. 5, size 74 × 56 µm, slide no. 9357, g 34/2.

Diagnosis—See Dutta and Sah, 1970, pp. 28-29.

Neocouperipollis (*Couperipollis*) *spinorobustus* (Kar & Kumar) comb. nov.

Holotype—Kar and Kumar (1986), size 65 × 48 µm, slide no. 9353, g 48.

Diagnosis—See Kar and Kumar (1986).

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