



## AN ANNOTATED BIBLIOGRAPHY OF FOSSIL ECHINIODS (ECHINODERMATA) OF INDIA AND PAKISTAN

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### ABSTRACT

In the present paper, an attempt has been made to compile the bibliography of the fossil echinoids of India and Pakistan in a classified form since 1837 till date (January, 2012) with a view to bringing out a status report on the taxonomic data of fossil echinoids of India and Pakistan besides pointing out their inconsistencies in light of current studies. The earliest report of regular echinoids in the Indian subcontinent is from the Permo-Carboniferous and Late Permian sediments of Karakoram and Salt Range respectively. The irregular echinoids appeared in Jurassic Period. While there is no record of echinoids from the Triassic Period, rare occurrence of echinoids are known from the Jurassic Period. However, the prolific and diversified development of echinoids in the Indian Subcontinent has been observed during the Cretaceous and Eocene periods. The temporal and spatial distribution of the echinoid fauna has also been discussed.

**Keywords:** Echinoids, Bibliography, India, Pakistan and Stratigraphic significance

### INTRODUCTION

Despite their alien appearance, echinoids, or sea-urchins as they are better known, are exclusively marine invertebrate animals, very common in the seas and oceans of today and are common fossils too. They are found from poles to the equator and from intertidal zone to depths of more than 5,000 meters. Their name derives from the Greek ‘echin’ (‘spiny’), referring to their protective spines and presumably ‘oid’ (egg-like) in reference to their globular shell, or test as it is known.

A possible precursor of phylum Echinodermata has recently been recorded and described by Kumar *et al.* (2012) from the Ediacaran Jodhpur Sandstone [630-542 million years ago (mya)], Marwar Supergroup, western Rajasthan, India. Echinoderms first appeared in the fossil record in the Cambrian around 530 mya and quickly diversified into many groups. Echinoids appeared in the Ordovician (around 450 mya) but were not very successful at first and other groups such as crinoids dominated the Palaeozoic.

Smith and Savill (2001) observed that in the Ordovician Period, there are records of only eight genera and nineteen species of fossil echinoids. With the exception of *Volchovia* (with three species), recorded from Early to Middle Ordovician, others come from the Upper Ordovician. However, it is still true that Ordovician echinozoans are amongst the rarest of fossil echinoderms.

By the beginning of Mesozoic (250 mya) many of the earlier echinoderm groups were extinct or in decline. While there is no record of echinoids from the Triassic Period, rare occurrence of echinoids are known from the Jurassic Period. They diversified through the Jurassic (210-145 mya) and have remained successful ever since.

The earliest work on the echinoid fauna of India and Pakistan is by Grant (1837). This was followed by the contributions from Sowerby (1840), d'Archiac and Haime (1850, 1853), de Konick (1862), Blanford, H. F. (1862, 1863), Duncan (1865, 1887a, 1887b), Wynne (1872), Blanford, W. T. (1872, 1876, 1879), Kossmat (1873), Stoliczka (1873a, 1873b), Duncan and Sladen (1882-86, 1883), Waagen (1885), Gregory (1893), Noetling

(1897), Vredenburg (1906 a, 1906 b, 1921), Reed (1910, 1912), Fourtau (1918), Spengler (1914, 1923), Davies (1926, 1943), Das Gupta, H. C. (1929), Currie (1930), Chiplonkar (1937, 1939), Sahni and Bhatnagar (1958), Sahni and Sastry (1958). Sastry and Sinha (1969) prepared a bibliography of fossil Echinodermata of India and adjoining countries incorporating the information published upto year 1961. Later, Sengupta (1964), Khanna (1967), Chiplonker, (1987), Chiplonkar and Badve (1972, 1974), Das Gupta, S. K. (1975), Bhattacharya and Bhattacharya (1978), Singh and Srivastava (1978), Srivastava (1978, 1981, 1982, 1988, 1996, 2003 a, 2003 b, 2004, 2006, 2009a, 2009b), Bhatia (1980), Tandon and Srivastava (1973a, 1973b, 1980), Tandon *et al.* (1972), (Badve and Aziz (1983), Aziz and Badve (1990, 2001), Aziz (1991), Ayyasami and Badve (1991), Srivastava and Mathur (1996), Srivastava and Kroh (2009, 2010), Srivastava and Kulshreshtha (2009), Srivastava and McNamara (2010, 2011), Srivastava and Singh (1999, 2001), Srivastava and Srivastava (1990), Srivastava *et al.* (1992, 2008, 2008a, 2008b, 2008c, 2009, 2010, 2011) and Jain (2002) produced a wealth of the fossil echinoid data. Smith and Jeffery (2000) introduced major changes in the taxonomy of Maastrichtian and Palaeocene echinoids at the generic and specific levels. Therefore, it was felt necessary to compile the bibliography of the fossil echinoids (Echinodermata) of these areas and scrutinise the data recorded and published till date in a classified form as per *International Code of Zoological Nomenclature* (1999) and the Treatise (Moore, 1966). The purpose of this work is to bring all the relevant information regarding the fossil echinoids of the Indian subcontinent at one place in a systematic manner. The present work notes some inconsistencies in the documented data relating to the taxonomic placement, proper comparision and designation of the lectotype, etc. The taxa recorded by Aziz and Badve (2001) need revision. It is from the same horizon and locality from where Badve and Aziz (1883) had earlier recorded the echinoid taxa. Srivastava (2003a) mentioned that Smith and Jeffery (2000) have already placed the taxa of Badve and Aziz (1983) in synonym *Gongrochanus herschelianus* Kier, 1962. The taxonomic revision of the fossil

echinoids of this area is in progress and will be published in due course. Recently, most of the echinoids recorded by Chiplonker and Badve of Bagh Beds have been synonymised in *Mecaster mutabilis* (Lambert, 1933) by Smith (2010) and erected a new species '*Stereocidaris*' *keertii*. *Mecaster mutabilis* (Lambert, 1933) has also been recorded and described from the Middle Cretaceous Nodular Limestone of Bilthana of the western region of Bagh Beds by Srivastava *et al.* (2011). This occurrence suggests that the Nodular Limestone is the westerly extension of the marine Khadlu-Mongra Nodular Limestone and is deposited under sub-tidal, very shallow marine, low energy environment. However, Kanji Lal (2011) argued that '*Stereocidaris*' *keertii* Smith, 2010 is an ecophynotic variant of '*Stereocidaris*' *namadica* (Duncan, 1887). It is interesting to note that recently Kroh *et al.* (2011) recorded and described *Echinolampas jacquemonti* Archiac and Haime, 1853 from the early Miocene sediments of Mishan Formation, Iran. This taxon is also known from Kachchh (India) and Sind (Pakistan) and could be an index fossil.

## DEVELOPMENT IN ECHINOID STUDIES

The diversity of echinoids during the Palaeozoic Period has been low in comparison with the post-Palaeozoic echinoids for want of not adapting to live in the wide variety of habitats, highest in the tropical and subtropical shelf seas and decreases markedly with increasing latitude and depth. It has also been observed by the author (Srivastava, 1996) that at specific level, only a very few species are common, confirming that the echinoids are sensitive to minor environmental changes. Moreover, most echinoid species are geographically restricted to some extent by geographical barriers, oceanic currents, nature of substratum, hydrodynamic regime, predation, salinity, temperature, food availability and depth (Mayr, 1954; Kier and Grant, 1965).

The echinoids though appeared in United Kingdom (England and Scotland) and U.S.A. during the Ordovician Period (Mannil, 1962; Smith and Savill, 2001), the earliest report of echinoids in India and Pakistan is from the Permian rocks of Karakoram and the Salt Range and shows an European affinity.

In India, the echinoid fauna are known from Andaman Islands, Assam, Gujarat, Himachal Pradesh, Jammu and Kashmir, Madhya Pradesh, Meghalaya, Rajasthan and Tamil Nadu while these are reported in Pakistan from Baluchistan, Kohat, Makran, Salt Range and Sind. The geographical distribution of the echinoid fauna in India and Pakistan along with their workers are given in Fig. 1.

The bibliography consists of following parts:

1. Checklist of genera with species
2. Stratigraphical distribution
3. Geographical distribution
4. Alphabetical list of genera and species
5. References

1. *Checklist of genera with species*: The generic names are arranged in this list alphabetically. The trivial names of the species are also arranged alphabetically under each genus.

2. *Stratigraphical distribution*: The genera with species, occurring in different stratigraphic levels are arranged chronologically and alphabetically.

3. *Geographical distribution*: The fossil localities in each geographical region appear under the different stratigraphic horizon arranged chronologically. The genera with species are also arranged alphabetically under each

locality.

4. *Alphabetical list of genera and species*: The genera and species are listed alphabetically. The generic name starts with a capital letter and is followed by the name of the author, stratigraphic horizon and locality name. The publication details and the Geological Survey of India Type Specimen Numbers are inserted within the brackets. When the same taxon occurs in more than one stratigraphic horizon, it has been arranged in the ascending chronological order. For species, the trivial name starts with a small letter and is followed by the generic name beginning with the capital letter and the name of the author of the species. The subsequent entries are the same as with the generic names mentioned above.
5. *References*: All consulted literature has been arranged chronologically and alphabetically.

## STRATIGRAPHIC SIGNIFICANCE

A total of 131 echinoid genera (Table - 1; Fig. 2, 5) have been reported so far from the Indian subcontinent. Out of these, 44 genera (33.58%), ranging in age from Permo-Carboniferous to Pliocene (Tables - 2, 4 and Fig. 6), constitute the regular and 82 genera (62.59%), ranging in age from Jurassic to Pliocene (Tables - 3, 4 and Fig. 7) constitute the irregular echinoids. However, five echinoid genera (03.81%) require proper taxonomic placement.

*Regular echinoids*: The earliest report of regular echinoids in India and Pakistan (Tables - 2, 4 and Fig. 6) is from the Permo-Carboniferous (01 genera; 01.81%) and Late Permian (02 genera; 03.63%) sediments of Karakoram and Salt Range respectively when the occurrence of *Cidaris* and *Archaeocidaris* (Cidaroida) was observed in the Tethys Sea. While there is no record of echinoids from the Triassic Period, rare occurrence of echinoids (08 genera; 14.54%) is known from the Jurassic Period because of harsher environmental conditions. Out of these, only two genera namely, *Cidaris* and *Salenia* extend to the younger horizons and the remaining six genera restrict themselves to the Jurassic Period. The prolific and diversified development of echinoids during the Cretaceous (12 genera; 21.81%) and Eocene (15 genera; 27.27%) periods indicate that during these periods, the environmental conditions were most favourable for development and growth of many new echinoid niches. It is interesting to note that all the Cretaceous genera except *Cidaris* and *Salenia* were found restricted to the Cretaceous Period and a new set of echinoids appeared during the Eocene Period. Out of the 15 Eocene genera, only three genera namely, *Cidaris*, *Coelopleurus* and *Opechinus* extend to the younger horizons and the remaining 12 genera restrict themselves to the Eocene Period. During the Oligocene Period (2 genera; 03.63%) no new taxa is added to the already existing two genera namely, *Cidaris* and *Coelopleurus*. A new set of echinoids (11 genera; 20.00%) appear during the Miocene Period and out of these, six genera namely, *Eucidaris*, (?) *Goniocidaris*, *Grammechinus*, *Hipponoe*, *Lepidopleurus* and *Temnechinus* were found restricted to this period. During the Pliocene Period (04 genera; 07.27%), a new echinoid taxa namely, *Salmacis* is added to the already existing three genera namely, *Cidaris*, *Goniocidaris* and *Temnopleurus*.

*Irregular echinoids*: The irregular echinoids (Tables - 3, 4 and Fig. 7) in the Indian subcontinent appeared in Jurassic Period (03 genera; 02.77%). Out of the three genera, only one genus *Holectypus* extends to the Cretaceous Period while the

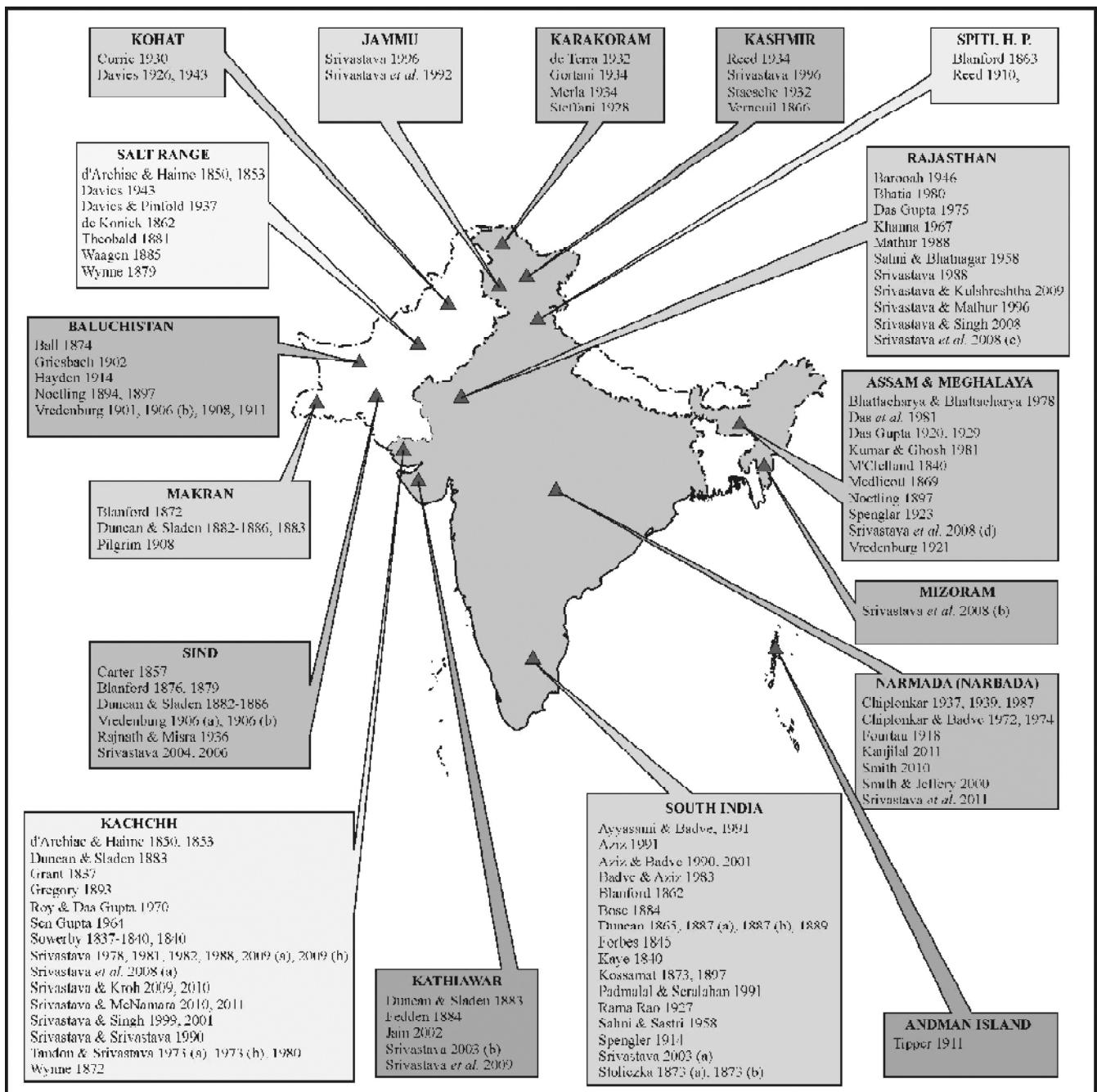


Fig. 1. Distribution of echinoid fauna alongwith the workers in India and Pakistan.

other two were found restricted to this period only. The Cretaceous Period saw a prolific and diversified echinoid development (33 genera; 30.55%). Out of these genera, 18 genera were found restricted to this period while seven genera extend up to the Eocene Period and from the Eocene assemblage one genus namely, *Echinocyamus* extend up to the Oligocene Period. A new set of echinoids (37 genera; 34.25%) appears during the Eocene Period. Out of these genera, 19 genera were found restricted to this period, while remaining genera extend to the younger horizons. During the Oligocene Period (08 genera; 07.40%), only a new echinoid taxon, *Eupatagus* (*Gymnopatagus*) is added to the already existing

seven genera. During the Miocene Period, out of 21 echinoid genera (19.44%), 10 genera made their first appearance and the remaining ones continued from the older horizons. Among the 10 first appeared genera, only three genera namely, *Brissus*, *Echinodiscus* and *Lovenia* extend to the Pliocene Period. During the Pliocene Period (06 genera; 05.55%), a new echinoid taxon, *Laganum* is added to the already existing five genera.

The lack of diversity and periods of diversification during the Triassic and Jurassic times may be explained by reassembly of Laurasia. During the Permian Period, the Indian Plate was situated nearer to the South Pole, away from the Equator and the environmental conditions in the Tethys Sea were not

**Table 1: Distribution of taxa in the echinoid orders of India and Pakistan**

SL No.	Order	Number of genera	% of total population
1.	Arbacioida	02	01.72
2.	Cassiduloida	21	18.10
3.	Cidaroida	11	9.48
4.	Clypeasteroida	07	06.03
5.	Echinoida	02	01.72
6.	Hemicidaroida	06	05.17
7.	Holasteroida	05	04.31
8.	Holotypoidea	08	06.89
9.	Orthopsida	01	00.86
10.	Phymosomatoida	08	06.89
11.	Salenioida	03	02.58
12.	Spatangoida	31	26.72
13.	Temnopleuroidea	10	08.62
14.	Uncertain	01	00.86

**Table 3: Distribution of taxa in the irregular echinoid orders of India and Pakistan**

SL No.	Subclass	Order	Number of genera	% of genera
IRREGULARIA (Total genera - 73)	Spatangoida	31	42.46	
	Holotypoidea	08	10.95	
	Holasteroida	05	06.84	
	Clypeasteroida	07	9.58	
	Cassiduloida	21	28.76	
	Uncertain	01	01.36	

**Table 2: Distribution of taxa in the regular echinoid orders of India and Pakistan**

Sl. No.	Subclass	Order	Number of genera	% of genera
REGULARIA (Total genera - 43)	Temnopleuroidea	10	23.59	
	Salenioida	03	06.97	
	Phymosomatoida	08	18.60	
	Orthopsida	01	02.32	
	Hemicidaroida	06	13.95	
	Cidaroida	11	25.58	
	Arbacioida	02	04.65	
	Echinoida	02	04.65	

**Table 4: Stratigraphic distribution of echinoid genera in India and Pakistan**

PERIOD	ECHINOID GENERA				Total number of genera	% of total genera		
	Regular		Irregular					
	Number	% of total genera	Number	% of total genera				
Pliocene	04	07.27	06	05.55	10	06.13		
Miocene	11	20.00	21	19.44	32	19.63		
Oligocene	02	03.63	08	07.40	10	06.13		
Eocene	15	27.27	37	34.25	52	31.90		
Cretaceous	12	21.81	33	30.55	45	27.60		
Jurassic	08	14.54	03	02.77	11	06.74		
Permian	02	03.63			02	01.22		
Permo - Carboniferous	01	01.81			01	00.61		

**Table 5: Stratigraphical distribution of fossil regular (arbacioida and cidaroida) echinoid genera in India and Pakistan**

ORDER	PERIOD → (AGE) ↓ GENUS	PERMOCAR-BONIFEROUS	PERMIAN	JURASSIC	CRETACEOUS	EOCENE	OLIGOCENE	MIocene	PLIOCENE
ARBACIOIDIA	<i>Coelopleurus</i>					+	+	+	
CIDAROIDIA	<i>Goniopygus</i>				+				
	<i>Archaeocidaris</i>	+	+						
	<i>Cidaris</i>		+	+	+	+	+	+	+
	<i>Dorocidaris</i>				+				
	<i>Eucidaris</i>							+	
	<i>Goniocidaris</i>							+	+
	(?) <i>Goniocidaris</i>							+	
	<i>Phyllacanthus</i>					+			
	<i>Porocidaris</i>					+			
	<i>Prionocidaris</i>					+			
	<i>Rhabdocidaris</i>			+					
	(?) <i>Typocidaris</i>				+				

favourable for growth and development of the echinoid fauna. The breaking of the Indian Plate from the Gondwana land during the Late Jurassic-Early Cretaceous Period, its northerly shift towards the Equator and the maximum diversification of the echinoid fauna during the Cretaceous Period in Indian subcontinent are in the accordance to the observation made by Valentine (1970). He (Valentine, 1970) noted that the time of joining of the continents is the period of low diversity while the time of fragmentation of the continents is the period of diversification.

#### TAXONOMIC SIGNIFICANCE AND DISTRIBUTION

The taxonomic distribution of echinoids is shown in the Tables 1, 2, 3 and Figs. 2, 3, 4. Among the regular echinoids (Fig. 3, Table 2), Cidaroida (Table 5) were maximum (11 genera; 25.58%), followed by Temnopleuroidea (Table 8; 10 genera;

23.59%), Phymosomatoida (Table 6; 08 genera; 18.60%), Hemicidaroida (Table 7; 06 genera; 13.59%), Salenioida (Table 8; 03 genera; 06.97%), Arbacioida and Echinoida (Tables 5 and 7; 02 genera each; 04.65%) and Orthopsida (Table 8; 01 genera; 02.32%). Among the irregular echinoids (Fig. 5, Table 3), Spatangoida (Table 11) constituted the maximum number (31 genera; 42.46%), followed by Cassiduloida (Table 9; 21 genera; 28.76%), Holotypoidea (Table 11; 08 genera; 10.95%), Clypeasteroida (Table 10; 07 genera; 9.58%), Holasteroida (Table 9; 05 genera; 06.84%) and an Uncertain order (Table 9; 01 genus; 1.36%). Considering the whole population of the echinoid taxa, Spatangoida (31 genera; 26.72%) predominates over all the echinoid taxa. It is followed by Cassiduloida (21 genera; 18.10%), Cidaroida (11 genera; 9.48%), Temnopleuroidea (10 genera; 08.62%), Holotypoidea and Phymosomatoida (08 genera each; 06.89%), Clypeasteroida (07 genera each; 06.03%),

**Table 6: Stratigraphical distribution of fossil regular (phymosomatoidea) echinoid genera in India and Pakistan**

ORDER	PERIOD → (AGE) ↓ GENUS	PERMOCAR - BONIFEROUS	PERMIAN	JURASSIC	CRETACEOUS	EOCENE	OLIGOCENE	MIocene	PLIOCENE
PHYSOMATOIDEA	<i>Acanthechinus</i>					+			
	<i>Aeolopneustes</i>					+			
	<i>Cyphosoma</i>					+			
	<i>Eurypteneustes</i>					+			
	<i>Micropsis</i>					+			
	<i>Phymosoma</i>				+				
	<i>Polycyphus</i>				+				
	<i>Stomechinus</i>		+						

**Table 7: Stratigraphical distribution of fossil regular (hemicidaroida and echinoida) echinoid genera in India and Pakistan**

ORDER	PERIOD → (AGE) ↓ GENUS	PERMOCAR - BONIFEROUS	PERMIAN	JURASSIC	CRETACEOUS	EOCENE	OLIGOCENE	MIocene	PLIOCENE
HEMICIDAROIDA	<i>Diplopodia</i>				+				
	<i>Diplopodi (Tetragramma)</i>				+				
	<i>Heterodiadema</i>				+				
	<i>Polydiadema</i>				+				
	<i>Pseudocidaris</i>			+					
	<i>Pseudodiadema</i>			+					
ECHINOIDEA	<i>Echinometra</i>					+			
	<i>Echinus</i>					+		+	

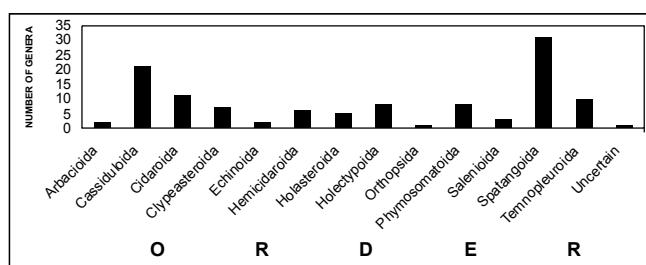


Fig. 2. Relative abundance of genera in the orders of echinoids of India and Pakistan.

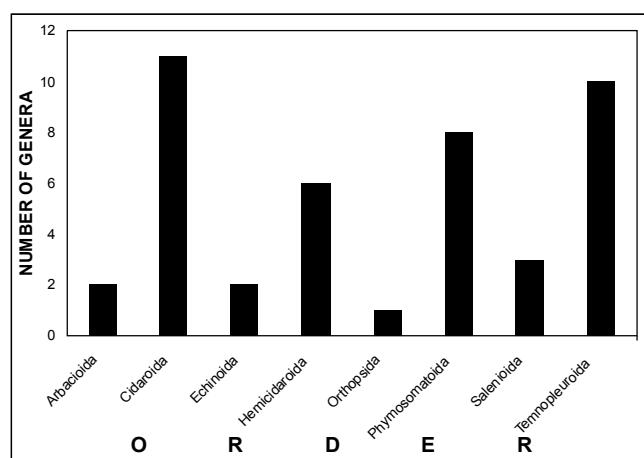


Fig. 3. Relative abundance of genera in the orders of regular echinoids of India and Pakistan.

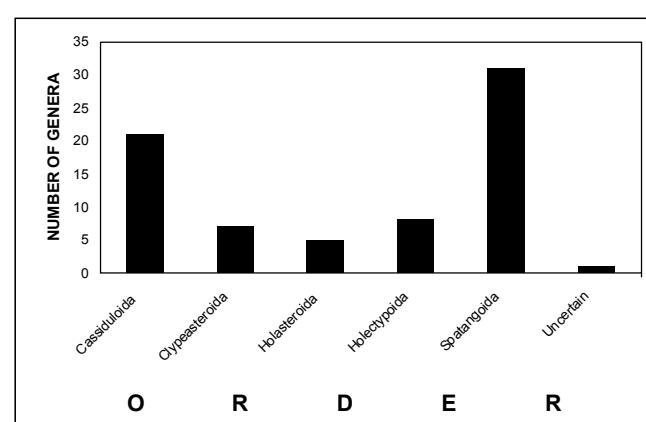


Fig. 4. Relative abundance of genera in the orders of Irregular echinoids of India and Pakistan.

Hemicidaroida (06 genera; 5.17%), Holasteroida (05 genera; 04.31%), Salenioida (03 genera; 02.58%), Echinida and Arbacioida (02 genera each; 01.72%) and finally Orthopsida and an Uncertain order (01 genus each; 00.86%).

#### FAUNAL ANALYSIS

1. A total of 131 echinoid genera have been reported so far from India and Pakistan. Out of these, 44 genera (33.58%) constitute the regular and 82 genera (62.59%) the irregular

**Table 8: Stratigraphical distribution of fossil regular (orthopsida, salenioida and temnopleuroidea) echinoid genera in India and Pakistan**

ORDER	PERIOD → (AGE) ↓ GENUS	PERMOCAR - BONIFEROUS		PERMIAN	JURASSIC	CRETACEOUS	EOCENE	OLIGOCENE	MIOCENE	PLIOCENE
		ORTHOPSIDA	SALENIOIDA							
TEMNOPLEUROIDEA	<i>Orthopsis</i>					+				
	<i>Recrosalenia</i>				+					
	<i>Salenia</i>				+	+	+			
	(?) <i>Salenia</i>				+					
	<i>Arachniopleurus</i>						+			
	<i>Dicthyopleurus</i>						+			
	<i>Grammechinus</i>							+		
	<i>Hipponoe</i>							+		
	<i>Lepidopleurus</i>							+		
	<i>Opechinus</i>							+		
	<i>Progonechinus</i>						+			
	<i>Salmacis</i>									+
	<i>Tennechinus</i>								+	+
	<i>Tennopleurus</i>								+	+

**Table 9: Stratigraphical distribution of fossil irregular (cassiduloida, holasteroida and uncertain) echinoid genera in India and Pakistan**

ORDER	PERIOD → (AGE) ↓ GENUS	JURASSIC	CRETACEOUS	EOCENE	OLIGOCENE	MIOCENE	PLIOCENE
CASSIDULOIDA (Continued)	<i>Botriopygus</i>		+				
	<i>Cardiopygus</i>		+				
	<i>Cassidulus</i>		+	+			
	<i>Catopygus</i>		+				
	<i>Echinobrissus</i>		+				
	<i>Echinolampas</i>			+	+	+	+
	<i>Eolampas</i>			+			
	<i>Erhodia</i>			+			
	<i>Gongrochanus</i>		+				
	<i>Ilarionia</i>			+			
	<i>Limpasiaster</i>		+				
	<i>Neocatopygus</i>			+			
	<i>Nucleolites</i>		+				
CASSIDULOIDA	<i>Nucleolites (Cassidulus)</i>		+				
	<i>Nucleolites (Pygorhynchus)</i>		+				
	<i>Paralampas</i>			+			
	<i>Phylloclypeus</i>			+			
	<i>Plesiolampas</i>		+	+			
	<i>Progongrochanus</i>		+				
	<i>Rhynchopygus</i>			+			
	<i>Tamililampas</i>		+				
HOLASTEROIDA	<i>Cardiaster</i>		+				
	<i>Collyrites</i>		+				
	<i>Hemipneustes</i>			+			
	<i>Holaster</i>		+				
	<i>Pygorhytis</i>		+				
UNCERTAIN	<i>Amblypygus</i>			+			

echinoids besides 5 echinoid genera (03.81%) which require proper taxonomic placement.

2. Taxonomic distribution of echinoid orders is given in the Table 1 and Fig. 2.
3. Stratigraphic distribution of echinoid genera is given in the Table 4 and Fig. 5.
4. It is interesting to note that out of 131 echinoid genera,

only one genus *Cidaris* has long stratigraphic range from Permian to Pliocene while majority of them are either restricted to their respective periods or have very short stratigraphic range.

5. The taxonomic status of the echinoid genera *Conoclypeus Agassiz*, *Discoidea Leske*, *Echinoconus Breynius* and *Euspatangus Agassiz* besides, an indeterminate echinoid

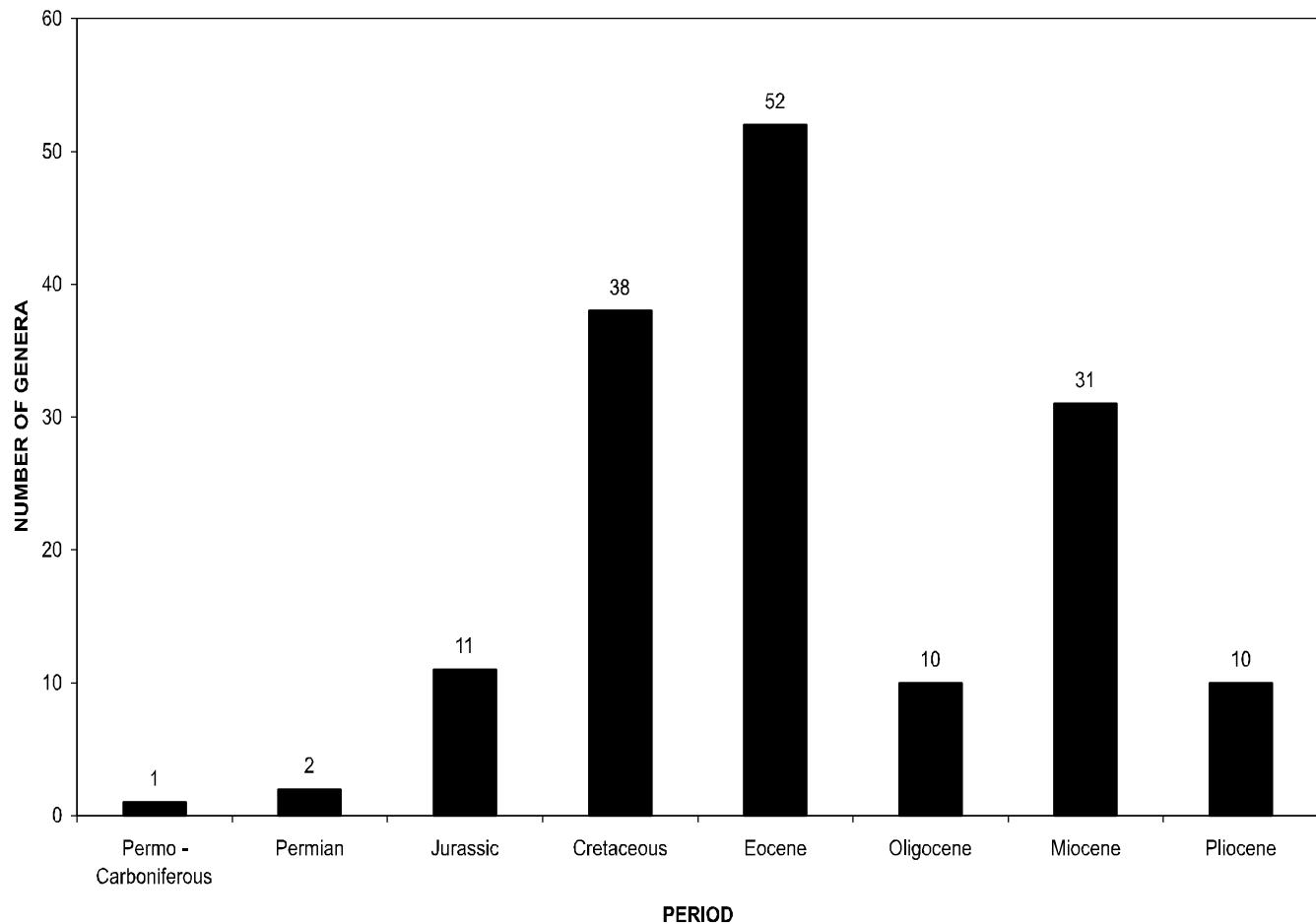


Fig. 5. Stratigraphic distribution of echinoids of India and Pakistan.

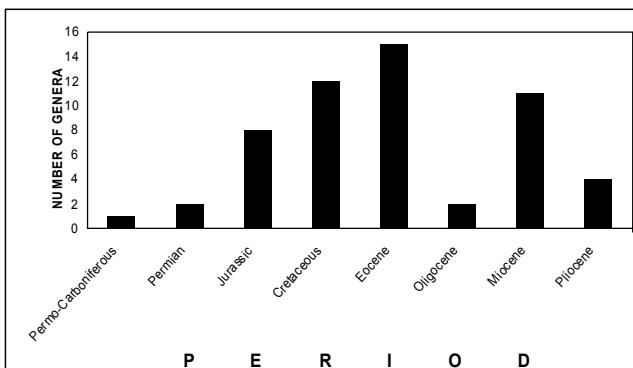


Fig. 6. Stratigraphic distribution of regular echinoids of India and Pakistan.

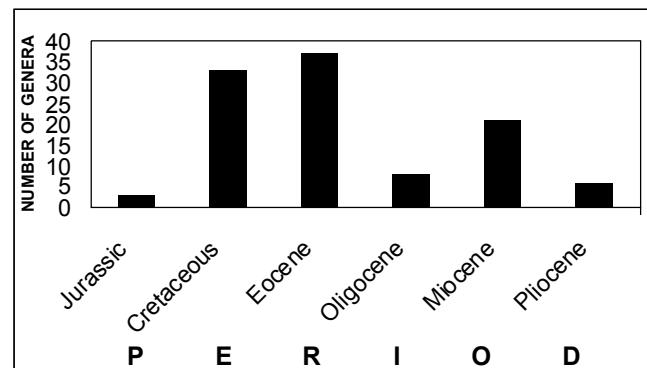


Fig. 7. Stratigraphic distribution of irregular echinoids of India and Pakistan.

Table 10: Stratigraphical distribution of fossil irregular (clypeasteroida) echinoid genera in India and Pakistan

ORDER	PERIOD → (AGE) ↓ GENUS	JURASSIC	CRETACEOUS	EOCENE	OLIGOCENE	MIocene	PLIOCENE
CLYPEASTEROIDA	<i>Clypeaster</i>			+	+	+	+
	<i>Echinocyamus</i>		+	+	+		
	<i>Echinodiscus</i>					+	+
	<i>Fibularia</i>					+	
	<i>Laganum</i>						+
	<i>Mortonia</i>					+	
	<i>Tridium</i>			+			

Table 11: Stratigraphical distribution of fossil irregular (spatangoidea and holcotypoida) echinoid genera in India and Pakistan

ORDER	PERIOD → (AGE)	JURASSIC	CRETACEOUS	EOCENE	OLIGOCENE	MIOCENE	PLIOCENE
	↓ GENUS						
SPATANGOIDA	<i>Breynia</i>			+	+	+	
	<i>Brissopatagus</i>			+			
	<i>Brissopsis</i>			+		+	
	(?) <i>Brissopsis</i>					+	
	<i>Brissus</i>					+	+
	<i>Ditrimaster</i>		+	+			
	<i>Eupatagus (Eupatafus)</i>			+	+	+	
	<i>Eupatagus (Gymnopatagus)</i>				+		
	<i>Hemiaster</i>		+	+			
	<i>Hemiaster (Hemiaster)</i>			+			
	<i>Hemiaster (Malwaster)</i>		+				
	<i>Hemiaster (Mecaster)</i>		+	+			
	<i>Heteraster</i>		+				
	<i>Linthia</i>		+	+			
	<i>Lovenia</i>					+	+
	<i>Macropneustes (Macropneustes)</i>			+			
	<i>Mareta</i>					+	
	<i>Meoma (Schizobrissus)</i>			+		+	
	(?) <i>Meoma (Schizobrissus)</i>					+	
	<i>Metalia</i>					+	
	<i>Micraster</i>		+	+			
	<i>Moira (Moiropsis)</i>			+		+	
	(?) <i>Moira (Moiropsis)</i>					+	
	<i>Opissaster</i>		+	+			
	<i>Prenaster (Prenaster)</i>			+			
	<i>Proisaster</i>		+				
	<i>Schizaster</i>			+	+	+	+
	<i>Schizaster (Paraster)</i>			+			
	<i>Schizaster (Schizaster)</i>			+	+	+	
	<i>Toxaster</i>		+				
	<i>Troschelia</i>					+	
HOLECTYPOIDA	<i>Conulus</i>		+				
	<i>Discoidea</i>		+				
	<i>Galerites</i>			+			
	<i>Globator</i>		+				
	Holectypoid genus indeterminate			+			
	<i>Holectypus</i>	+	+				
	<i>Pygopyrina</i>		+				
	<i>Pyrina</i>		+				

genus and their species recorded and described earlier from the Indian subcontinent has not been changed at this stage, though these genera have not been mentioned in the Treatise (Moore, 1966). Further, many recorded echinoids have been kept under synonym of the other echinoid genera in the Treatise (Moore, 1966). The details are given below:

#### Echinoid genus

- a. *Botriopygus* d'Orbigny
- b. *Cyphosoma* L. Agassiz
- c. *Dorocidaris* A. Agassiz
- d. *Echinobrissus* Gray
- e. *Eocidaris* Desor
- f. *Eolampas* Duncan & Sladen

#### Kept under synonym of echinoid genus

- Pygorhynchus* L. Agassiz
- Phymosoma* Haime
- Cidaris* Leske
- Nucleolites* Lamarck
- Archaeocidaris* M'Coy
- Pseudopygaulus* Coquand

g. *Hipponae* Gray

h. *Lepidopleurus* Duncan & Sladen

i. *Paralampas* Duncan & Sladen

j. *Phylloclypeus* deLoriol

k. *Pyrina* Desmoulin

l. *Typocidaris* Pomel

*Tripneustes* L. Agassiz

*Leptopleurus* Lambert & Thiery

*Rhynchopygus* d'Orbigny

*Clypeolampas* Pomel

*Conulus* Leske

*Stereocidaris* Pomel

Moreover, there is no mention of the species of these synonymous genera, recorded and described earlier from the Indian subcontinent, in the Treatise (Moore, 1966). It is, therefore, necessary to restudy the genotype and holotype of all the above echinoid taxa for proper taxonomic placement.

- 6. Many new echinoid taxa have been listed in the present work.

## SYNONYMOUS MAASTRICHTIAN – PALAEOCENE ECHINOID

Sl. No.	Taxa synonymies	Under taxa
1.	<i>Cidaris verneuilis</i> Duncan and Sladen (1882; p. 26, Pl. 5, figs. 6-8)	<i>Phyllacanthus</i> sp. (Smith and Jeffery, 2000; p. 20, fig. 5L)
2.	<i>Phyllacanthus sindensis</i> Duncan and Sladen <i>Phyllacanthus</i> sp. Duncan and Sladen <i>Phyllacanthus ranikoti</i> Duncan and Sladen <i>Cidaris</i> sp. Duncan and Sladen, 1882	<i>Prionocidaris sindensis</i> (Duncan and Sladen, 1882) (Smith and Jeffery, 2000; p. 21, fig. 6A)
3.	<i>Cidaris lacrymula</i> Duncan and Sladen, 1882	<i>Delocidaris lacrymula</i> (Duncan and Sladen, 1882) (Smith and Jeffery, 2000; p. 31, fig. 11A)
4.	<i>Cidaris</i> sp. Duncan and Sladen (1882; p. 50, Pl. 10, figs. 9-12)	<i>Cidaris</i> spines Morphotype E (Smith and Jeffery, 2000; p. 39)
5.	<i>Cidaris</i> sp. Duncan and Sladen (1882; p. 50, Pl. 10, figs. 9-14; Pl. 11, figs. 1-11)	<i>Cidaris</i> spines Morphotype M (Smith and Jeffery, 2000; p. 40)
6.	<i>Porocidaris</i> sp. Duncan and Sladen (1882; p. 50, Pl. 11, fig. 12) <i>Phyllacanthus</i> sp. Duncan and Sladen (1882; p. 50, Pl. 11, figs. 14 - 23)	<i>Cidaris</i> spines Morphotype N (Smith and Jeffery, 2000; p. 40)
7.	<i>Salenia blanfordi</i> Duncan and Sladen (1882; p. 29, Pl. 6, figs. 1-8)	<i>Salenia (Pleurosalenia) blanfordi</i> (Duncan and Sladen, 1882) (Smith and Jeffery, 2000; p. 57, fig. 20GH)
8.	<i>Cyphosoma abnormale</i> Duncan and Sladen (1882; p. 32, Pl. 7, figs. 1-9)	<i>Acanthechinus nodulosus</i> (Duncan and Sladen, 1882) (Smith and Jeffery, 2000; p. 100)
9.	<i>Aelopneustes de lorioli</i> Duncan and Sladen (1882; p. 48, Pl. 8, figs. 6-9)	<i>Eurypneustes grandis</i> (Duncan and Sladen, 1882) (Smith and Jeffery, 2000; p. 106)
10.	<i>Dictyopleurus haimai</i> Duncan and Sladen (1882; p. 39, Pl. 9, figs. 4-5)	<i>Dictyopleurus darchiaci</i> (Duncan and Sladen, 1882) (Smith and Jeffery, 2000; p. 131)
11.	<i>Porocidaris</i> sp. Duncan and Sladen (1882; p. 50, Pl. 11, figs. 12-13) based on a fragment of spine, age doubtful, is identical to spines of <i>Porocidaris</i> reported from the Middle Eocene of Sind (Smith and Jeffery, 2000; p. 37)	
12.	<i>Cassidulus oldhamianus</i> Stoliczka (1873; p. 30, Pl. 5, figs. 10-11)	<i>Petalobrissus (Petalobrissus) oldhamianus</i> (Stoliczka, 1873) (Smith and Jeffery, 2000; p. 172, fig. 70AB)
13.	<i>Paralampas pileus</i> Duncan and Sladen (1882; p. 73, Pl. 15, figs. 11-12) <i>Paralampas minor</i> Duncan and Sladen (1882; p. 74, Pl. 17, figs. 1-4)	<i>Petalobrissus (Paralampas) pileus</i> (Duncan and Sladen, 1882) (Smith and Jeffery, 2000; p. 174, fig. 72)
14.	<i>Nucleolites t studio</i> Forbes (1846; p. 161, Pl. 19, fig. 2) <i>Cassidulus t studio</i> (Forbes) Stoliczka (1873; p. 31, Pl. 5, fig. 9)	<i>Oolopygus t studio</i> (Forbes, 1846) (Smith and Jeffery, 2000; p. 131)
15.	<i>Cassidulus crassus</i> Stoliczka (1873; p. 32, Pl. 5, figs. 13-14)	<i>Oolopygus crassus</i> (Stoliczka, 1873) (Smith and Jeffery, 2000; p. 187, fig. 79 AC)
16.	1840 <i>Cyrtoma herscheliana</i> McClelland, p. 185, Pl. 5, figs. 1-3 1846 <i>Nucleolites elatus</i> Forbes, p. 162, Pl. 19, fig. 1 1873 <i>Stigmatopygus elatus</i> (Forbes) Stoliczka, p. 28, Pl. 5, figs. 1-8 1923 <i>Stigmatopygus elatus</i> (Forbes) Spengler, p. 5, Pl. 1, figs. 3-6 1962 <i>Gongrochanus herschelianus</i> (McClelland) Kier, p. 132, Pl. 19, figs. 4-6; Pl. 20, fig. 1 1981 <i>Cassidulus oldhamica</i> Stoliczka Bhattacharya and Bhattacharya, Pl. 4, figs. 1-2 1981 <i>Stigmatopygus elatus</i> (Forbes) Bhattacharya and Bhattacharya, Pl. 5, figs. 1-3 1983 <i>Gongrochanus herschelianus</i> Badve & Aziz, p. 233, figs. 3a-c 1983 <i>Gongrochanus chiplonkari</i> Badve & Aziz, p. 237, figs. 3d-e 1983 <i>Gongrochanus circularis</i> Badve & Aziz, p. 239, figs. 4c-e 1983 <i>Gongrochanus kieri</i> Badve & Aziz, p. 238, figs. 3h-i 1983 <i>Gongrochanus ottakovilensis</i> Badve & Aziz, p. 239, figs. 4a-b 1983 <i>Gongrochanus stoliczkai</i> Badve & Aziz, p. 237, figs. 3f-g, j 1983 <i>Gongrochanus tamilnadeuensis</i> Badve & Aziz, p. 240, figs. 4f-g	<i>Gongrochanus herschelianus</i> (McClelland, 1840) (Smith and Jeffery, 2000; p. 196, fig. 83, 84B)
17.	<i>Cassidulus ellipticus</i> Duncan and Sladen (1882; p. 65, Pl. 15, figs. 7-10)	<i>Stigmatopygus ellipticus</i> (Duncan and Sladen, 1882) (Smith and Jeffery, 2000; p. 207, fig. 88 A)

Sl. No.	Taxa synonymies	Under taxa
18.	<i>Rhynchopygus pygmaeus</i> Duncan and Sladen (1882; p. 68, Pl. 15, figs. 5-6)	<i>Rhyncholampus pygmaeus</i> (Duncan and Sladen, 1882) (Smith and Jeffery, 2000; p. 213, fig. 90 D-H)
19.	<i>Echinanthus pumilus</i> Duncan and Sladen (1882; p. 13, Pls. 2-3)	<i>Gitolampas pumilus</i> (Duncan and Sladen, 1882) (Smith and Jeffery, 2000; p. 221, fig. 94 A-E)
20.	<i>Echinanthus enormis</i> Duncan and Sladen (1882; p. 64, Pl. 17, figs. 5-10)	<i>Gitolampas enormis</i> (Duncan and Sladen, 1882) (Smith and Jeffery, 2000; p. 228, fig. 96)
21.	<i>Pleisolampas praelonga</i> Duncan and Sladen (1882; p. 56, Pl. 14, figs. 2-3)	<i>Pleisolampas ovalis</i> Duncan and Sladen, 1882 (Smith and Jeffery, 2000; p. 248, fig. 106)
22.	<i>Pleisolampas rostrata</i> Duncan and Sladen (1882; p. 61, Pl. 13, figs. 1-3) <i>Pleisolampas polygonalis</i> Duncan and Sladen (1882; p. 61, Pl. 13, figs. 10-11)	<i>Pleisolampas placenta</i> Duncan and Sladen, 1882 (Smith and Jeffery, 2000; p. 250, fig. 107)
23.	<i>Eolampas antecursor</i> Duncan and Sladen (1882; p. 62, Pl. 17, figs. 11-15)	<i>Pseudopygaulus antecursor</i> (Duncan and Sladen, 1882) (Smith and Jeffery, 2000; p. 256, fig. 110)
24.	<i>Phylloclypeus</i> sp. Duncan and Sladen (1882; p. 54, Pl. 12, fig. 8) <i>Conoclypeus</i> sp. Duncan and Sladen (1882; p. 52, Pl. 12, figs. 5-6) <i>Conoclypeus</i> sp. Davies (1943; p. 57)	<i>Conoclypeus sindensis</i> (Duncan and Sladen, 1882) (Smith and Jeffery, 2000; p. 259, fig. 104B)
25.	<i>Rhyncholampus calderi</i> (d'Archiac and Haime, 1853) (= <i>Eurhodia caldera</i> d'Archiac and Haime, 1853, p. 352, Pl. 30, fig. 19; <i>Rhynchopygus calderi</i> Duncan and Sladen, 1882; p. 67, Pl. 15, fig. 1)	It is omitted from the Ranikot Series, Sind, as it is based on one specimen that was not found <i>in situ</i> . It may have come from a higher group (Kirthar).
26.	<i>Epiaster nobilis</i> Stoliczka (1873, p. 20, Pl. 3, figs. 7-8)	<i>Micraster (Mokotibaster) nobilis</i> (Stoliczka, 1873) (Smith and Jeffery, 2000; p. 300, fig. 127 AC)
27.	<i>Hemaster sexangulatus</i> d'Orbigny (1854; p. 256, Pl. 889) <i>Hemaster sexangulatus</i> d'Orbigny Stoliczka (1873, p. 18, Pl. 3, fig. 6) <i>Hemaster sexangulatus</i> d'Orbigny Kossmat (1897; p. 106)	<i>Leymeriaster sexangulatus</i> (d'Orbigny, 1854) (Smith and Jeffery, 2000; p. 329)
28.	<i>Linthia sindensis</i> Duncan and Sladen (1882; p. 18, Pl. 4)	<i>Paraster sindensis</i> Duncan and Sladen, 1882) (Smith and Jeffery, 2000; p. 336)
29.	<i>Linthia indica</i> Duncan and Sladen (1882; p. 82, Pl. 20, figs. 1-8)	<i>Paraster indicus</i> Duncan and Sladen, 1882) (Smith and Jeffery, 2000; p. 337)
30.	<i>Brissus expansus</i> Forbes (1846; p. 160, Pl. 19, fig. 7) <i>Brissus rana</i> Forbes (1846; p. 161, Pl. 19, fig. 5) <i>Hemaster rana</i> (Forbes) Kossmat (1897; p. 106)	<i>Paraster expansus</i> (Forbes, 1846) (Smith and Jeffery, 2000; p. 338)
31.	<i>Schizaster alveolatus</i> Duncan and Sladen (1882; p. 87, Pl. 20, figs. 10-13)	<i>Proraster? alveolatus</i> (Duncan and Sladen, 1882) (Smith and Jeffery, 2000; p. 344)
32.	<i>Hemaster oldhami</i> Noetling (1897; p. 36, Pl. 8, figs. 4-7)	<i>Trachyaster oldhami</i> (Noetling, 1897) (Smith and Jeffery, 2000; p. 344, fig. 141 D-F)
33.	<i>Hemaster cristatus</i> Stoliczka (1873, p. 17, Pl. 3, figs. 2-5)	<i>Holcopneustes cristatus</i> (Stoliczka, 1873) (Smith and Jeffery, 2000; p. 345, fig. 141 A-C)
34.	<i>Hemaster indicus</i> Stoliczka (1873, p. 16, Pl. 2, figs. 6-7; Pl. 3, fig. 1) <i>Hemaster rana</i> Stoliczka (1873, p. 15, Pl. 2, figs. 4-5) <i>Hemaster tuberosus</i> Stoliczka (1873, p. 12, Pl. 1, figs. 3-6) <i>Hemaster pullus</i> Stoliczka (1873, p. 18, Pl. 2, figs. 8-9) <i>Linthia</i> sp. Duncan and Sladen (1882; p. 85, Pl. 20, fig. 5) <i>Hemaster pullus</i> Stoliczka; Kossmat (1897; p. 61, 96, Pl. 10, fig. 6) <i>Hemaster blanfordi</i> Noetling (1897; p. 35, Pl. 8, fig. 3)	<i>Holcopneustes indicus</i> (Stoliczka, 1873) (Smith and Jeffery, 2000; p. 345)
35.	<i>Hemaster elongatus</i> Duncan and Sladen (1882; p. 78, Pl. 19, figs. 7-15) <i>Hemaster elongatus</i> Duncan and Sladen; Davies (1943; p. 70)	<i>Opissaster elongatus</i> (Duncan and Sladen, 1882) (Smith and Jeffery, 2000; p. 352, fig. 144 D-F)

## SYNONYMOUS ECHINOID TAXA OF JURASSIC, CRETACEOUS, PALAEOCENE, EOCENE AND MIOCENE

Sl. No.	Taxa	Synonymised under	Reference	Remarks
1.	<i>Hemicidaris jaisalmerensis</i> Sahni & Bhatnagar (in Sahni, 1955) Sahni & Bhatnagar, 1958 <i>Recrosalenia</i> Bhatia, 1980	<i>Acrosalenia jaisalmerensis</i> (Sahni & Bhatnagar in Sahni, 1955)	Srivastava <i>et al.</i> , 2010:59	
2.	<i>Cidaris</i> sp., Spine (Duncan & Sladen, 1882: 50, pl. 10, figs. 9-12).	<i>Phyllacanthus</i> sp.	Smith & Jeffery, 2000:20.	
3.	<i>Cidaris veneula</i> Duncan & Sladen (Duncan & Sladen, 1882: 26, pl. 5, figs. 9-12).	<i>Phyllacanthus</i> sp.	Smith & Jeffery, 2000:20.	
4.	<i>Phyllacanthus sindensis</i> Duncan & Sladen (Duncan & Sladen, 1882: 27, pl. 5, figs. 1-12).			
5.	<i>Phyllacanthus</i> sp. (Duncan & Sladen, 1882: 28, pl. 5, figs. 4-5).	<i>Prionocidaris sindensis</i> (Duncan & Sladen, 1882)	Smith & Jeffery, 2000:21.	
6.	<i>Phyllacanthus ranikoti</i> Duncan & Sladen (Duncan & Sladen, 1882: 27, pl. 5, figs. 9-10).			
7.	<i>Cidaris</i> sp. (Duncan & Sladen, 1882: 25, pl. 5, figs. 1-3).			
8.	<i>Cidaris lacrymula</i> Duncan & Sladen (Duncan & Sladen, 1882: 8, pl. 1, fig. 1).	<i>Delocidaris lacrymula</i> (Duncan & Sladen, 1882)	Smith & Jeffery, 2000:31.	
9.	<i>Metalia harshdae</i> Jain, 2002: 128, pl. 6, fig. 10; pl. 7, fig. 1.	<i>Brissopsis harshdae</i>	Srivastava, 2003:100	
10.	<i>Mortonia lowraliensis</i> Jain, 2002:126	<i>Echinocyamus lowraliensis</i>	Srivastava <i>et al.</i> , 2009:100	
11.	Holectypoid indeterminate Srivastava & Singh (Srivastava & Singh, 2001:32, pl. III, figs 1-4)	<i>Amblypygus pentagonalis</i> (Duncan & Sladen, 1883)	Srivastava, 2009:46-51	
12.	<i>Peripneustes insignis</i> Duncan & sladen, 1883: 42-45, pl. 5, fig. 1-4. <i>Peripneustes</i> sp. Duncan & sladen, 1884: 234, pl. 36, fig. 18-19. <i>Meoma (Schizobrissus) insignis</i> (Duncan & Sladen) Srivastava 2004: 148, Pl. 7, figs. 1-4	<i>Schizobrissus insignis</i> (Duncan & Sladen, 1883)	Srivastava & McNamara, 2010: 4, figs. 2A-H, 3A-I	

## RECOMMENDATIONS AND SUGGESTIONS

The taxonomic status of majority of the echinoid fauna described from the Indian subcontinent by previous workers is still uncertain. The generic placement of the echinoid taxa, however, in the clypeasteroids, cassiduloids and spatangoids is correct up to certain extent but at the specific levels, it requires a proper and thorough check. Moreover, the comparison of species with the echinoid taxa of the adjoining areas in the Tethyan realm is insufficient and the lectotype of the new species described by most of the earlier workers has yet to be designated. Further, many species of the fossil echinoids erected in the different families of the above orders from the Indian subcontinent on minor morphological variations may be merged into a single species or placed properly. This has cast doubt over their usefulness in stratigraphic studies. Therefore, it is necessary to study, revise and update the fossil echinoids recorded from these areas in the light of taxonomic procedures and terminology as highlighted in the new literatures. The study should involve examination of the old collections of the fossil echinoid fauna housed in various museums of the Geological Survey of India and other Indian institutions, which may generate basic data on fossil echinoids. The data should be presented in the form of biostratigraphic zones, each representing a stratigraphic interval with distinctive faunal elements. The sequence of several such intervals with

respective characteristic assemblages of fossils may provide a multipurpose system in stratigraphy that could be used as a basis for (a) reckoning time, (b) studying evolutionary changes in the echinoid fauna and (c) estimating the changing conditions of environment through the stratigraphic column. This information could also be helpful in studying palaeobiogeography and evolutionary trends of certain groups of echinoids, viz. spatangoids, clypeasteroids and cassiduloids which occur in large numbers in the Late Cretaceous - Paleogene deposits and also in Recent seas.

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## CHECKLIST OF GENERA WITH SPECIES

Genus	Species	Genus	Species
<i>Acanthechinus</i>	<i>nodosus</i>	<i>Aeolopneustes</i>	<i>de-lorioli</i>
<i>Acrosalenia</i>	<i>jaisalmerensis</i>	<i>Archaeocidaris</i>	<i>forbesiana, rossica, sp.</i>
<i>Amblypygus</i>	<i>altus, latus, moriensis, patellaformis, pentagonalis, subrotundus, subrotundus var. conicus, tumidus</i>	<i>Botriopygus</i>	<i>sp.</i>
<i>Arachniopleurus</i>	<i>reticulatus, reticulatus var.</i>	<i>Brissopatagus</i>	<i>sindensis</i>
<i>Breynia</i>	<i>carinata, multituberculata</i>	(?) <i>Brissopsis</i>	<i>sp.</i>
<i>Brissopsis</i>	<i>apicalis, harshadae, (?) scutiformis, sowerbyi, (?) sowerbyi</i>	<i>Cardiaster</i>	<i>orientalis, regularis</i>
<i>Brissus</i>	<i>daviesi, expansus inaequalis, aff. oblongus, rana, sp.</i>	<i>Cardiopygus</i>	<i>cardus</i>
<i>Cassidulus</i>	<i>elatus, ellipticus, emys, subinvaginatus</i>	<i>Catopygus</i>	<i>sulcatus</i>
<i>Cidaris</i>	<i>depressa, excelsa, faringdonensis, forbesiana, halaensis, hirudo, lacrymula, namadicus, opipara, sceptrifera, subvesiculosa, cf. subvesiculosa, vermeuili, cf. vesiculosus, spines, sp., (?) sp.</i>	<i>Clypeaster</i>	<i>affinis (?), apertus, carteri, circularis, complanatus, depressus, faloriensis, goirensis, cf. halaensis, kurangaensis, monticulifera, oblongus, pelviformis, profundus, pulvinatus, aff. scutiformis, simplex, sowerbyi, suffarinatus, varians, waageni, sp.</i>
<i>Coelopleurus</i>	<i>coronalis, equis, forbesi, pratti, sindensis</i>	<i>Coelopleurus (Keraiphorus)</i>	<i>sp.</i>
		<i>Colyrites</i>	<i>cf. bicordata, dorsalis</i>
<i>Conoclypeus</i>	<i>alveolatus, declivis, flemingi, galerus, cf. ovatus, pilgrimi, pinguisi, pulvinatus, rostratus, sindensis, warthi, sp.</i>	(?) <i>Conoclypeus</i>	<i>sp.</i>
<i>Conulus</i>	<i>sp.</i>	<i>Cyphosoma</i>	<i>abnormale, cenomanense, macrostoma, nummuliticum, undatum, sp.</i>
<i>Dictyopleurus</i>	<i>d' archiac, haimei, haimei var., ziczac</i>	<i>Diplopodia (Tetragramma)</i>	<i>aff. micropyga</i>
<i>Diplopodia</i>	<i>sp.</i>	<i>Discoidea</i>	<i>aff. decorata, aff. infera, sp.</i>
<i>Ditremaster</i>	<i>digonus, digonus var. kohaticus, elongatus, tamulicus, sp</i>	<i>Dorocidaris</i>	<i>namadica</i>
<i>Echinanthus</i>	<i>enormis, griesbachi, halaensis, intermedius, profundus, pumilus</i>	<i>Echinobrissus</i>	<i>cf. angutier, goybeti, haydeni, similis, subquadratus, sp.</i>
<i>Echinocyamus</i>	<i>jaisalmerensis, kamrupensis, lowraliensis, nummuliticus, nummuliticus var. bernaniensis, nummuliticus var. obesus, nummuliticus var. oviformis, nummuliticus var. planus, polymorpha, polymorpha var. sufflata, raoi, rotundus</i>	<i>Echinodiscus</i>	<i>auritus var., desori, desori var., ellipticus, elongatus, placentia, sp.</i>
Echinoid gen. indet.	sp. indet.	<i>Echinolampas</i> *garoensis,	<i>aequivoca, alta, alta var., angustifolia, cookei, damesi, d' archiac, difficilis, discoideus, discoideus var., discoideus var. <math>\beta</math> and <math>\gamma</math>, feddeni, * guvarenensis, haimei, hanguensis, indica, indica var., insignis, jacquemonti, jigniensis, juvenilis, kachensis khariensis, lepadiformis, lipiformis, lucae, nummulitica, obesa, pipurensis, placenta, radakensis, rotunda, sindensis, sindensis var., hemisphaerica, sphaeroidalalis sphaeroidalalis (?), subconica, subsimilis, tandoni, tumida, tumida var., vicaryi, wynnei, sp.</i>
<i>Echinometra</i>	<i>thomsoni</i>	<i>Echinus</i>	<i>dubius, stracheyi, subcrenatus</i>
<i>Eolampas</i>	<i>antecursor, excentricus</i>	<i>Eucidaris</i>	<i>spines</i>

Genus	Species	Genus	Species
<i>Eupatagus</i> ( <i>Eupatagus</i> )	<i>affinis, avellana, (?) avellana, cordiformis, patellaris, rajasthanensis, rostratus, aff. rostratus, cf. rostratus, singhi, sufflatus</i>	<i>Eupatagus</i> ( <i>Gymnopatagus</i> )	<i>tandoni</i>
<i>Eurhodia</i>	<i>calderi, morrisi, morrisi var. salsensis</i>	<i>Euryyneustes</i>	<i>grandis</i>
<i>Fibularia</i>	<i>depressa, guvarensis, ovulum</i>	<i>Galerites</i>	<i>pulvinatus</i>
<i>Globator</i>	<i>depsangensis</i>	<i>Gitolampas</i>	<i>mcmamarae</i>
<i>Goniopygus</i>	<i>sp.</i>	<i>Goniocidaris</i>	<i>affinis, aff. affinis</i>
<i>Grammechinus</i>	<i>regularis</i>	<i>Goniocidaris</i>	<i>spines (?)</i>
<i>Hemiaster</i>	<i>ameliae, biplicata, expansus, gabrielis, aff. grossouvrei, orbignyanus var. minor, sexangulatus, stoliczkai, sp.</i>	<i>Hemiaster</i> ( <i>Malwaster</i> )	<i>holoambitus, subsimilis</i>
<i>Hemiaster</i> ( <i>Mecaster</i> )	<i>chirakhensis, cristatus, frontacutus, herberti, inaequalis, meslei, pullus, rarus, saadensis, sp.</i>	<i>Heteraster</i>	<i>nobilis</i>
<i>Hemipneustes</i>	<i>indicus</i>	<i>Hipponoe</i>	<i>antiqua, proavia</i>
<i>Heterodiadema</i>	<i>libicum var. asiatica</i>	<i>Holectypoid</i>	<i>indeterminate</i>
<i>Holaster</i>	<i>indicus, marinelli, sp.</i>	<i>Ilarionia</i>	<i>sindensis</i>
<i>Holectypus</i>	<i>sarthicensis, sp.</i>	<i>Linthia</i>	<i>dainellii, indica, orientalis, sindensis, sp.</i>
<i>Hypselaster</i>	<i>rajasthanensis</i>		
<i>Laganum</i>	<i>tumidum</i>		
<i>Lepidoperus</i>	<i>granulatus, hemisphaericus</i>	<i>Limpasiaster</i>	<i>ariyalurensis, pentagonelis, quadralis</i>
<i>Lovenia</i>	<i>aff. elongata</i>	<i>Kachchhia</i>	<i>krohi</i>
<i>Macropneustes</i> ( <i>Macropneustes</i> )	<i>rotundus, speciosus</i>	<i>Mareta</i>	<i>ranjitpurensis</i>
<i>Megapneustes</i>	<i>jaisalmerensis</i>	<i>Mecaster</i>	<i>mutabilis</i>
<i>Metalia</i>	<i>agariciformis, depressa, (?) scutiformis var. rotunda, sp.</i>	<i>Micraster</i>	<i>sexangulatus, tumidus</i>
<i>Micropedina</i>	<i>olisiponensis, sphaerooides</i>	<i>Micropsis</i>	<i>venustula, sp.</i>
<i>Moira</i> ( <i>Moiopsis</i> )	<i>antiqua, primaeva</i>	<i>(?) Moira</i> ( <i>Moiopsis</i> )	<i>sp.</i>
<i>Mortonia</i>	<i>lowraliensis</i>	<i>Neocatopsgus</i>	<i>rotundus</i>
<i>Nucleolites</i>	<i>chirakhensis, elongatus, malwaensis, pullatus, rajnathi, similis</i>	<i>Nucleolites</i> ( <i>Cassidulus</i> )	<i>elatus</i>
<i>Nucleolites</i> ( <i>Pygorhynchus</i> )	<i>planatus, testudo</i>	<i>Opechinus</i>	<i>affinis, costatus, rousseauui, tuberculosus</i>
<i>Opissaster</i>	<i>carinatus, pullus, similis, symmetricus</i>	<i>Orthopsis</i>	<i>indica, indicus, similis, sp.</i>
<i>Paralampas</i>	<i>minor, pileus</i>	<i>Phyllacanthus</i>	<i>ranikoti, sindensis, sp.</i>
<i>Phylloclypeus</i>	<i>sp.</i>	<i>Phymosoma</i>	<i>mongraensis, namadicum, nummuliticum</i>
<i>Plesiolampas</i>	<i>elongata, ovalis, placenta, polygonalis, praelonga, rostrata</i>	<i>Polycyphus</i>	<i>rimuensis</i>
<i>Polydiadema</i>	<i>bosei</i>	<i>Porocidaris</i>	<i>anomala</i>
<i>Prenaster</i> ( <i>Prenaster</i> )	<i>oviformis</i>	<i>Prionocidaris</i>	<i>canaliculata, excelsa, granulata</i>
<i>Progonechinus</i>	<i>eocenicus</i>	<i>Protechinus</i>	<i>paucituberculatus, sp.</i>
<i>Pseudocidaris</i>	<i>de-filippii, unigranulatus, spines</i>	<i>Progongrochanus</i>	<i>Ariyalurensis, bellus, crassus, oldhaminus, planatus, testudo</i>
<i>Proisaster</i>	<i>coramandeli</i>	<i>Pygopyrina</i>	<i>pusilla</i>
<i>Pseudodiadema</i>	<i>cutchensis, subangulatum, sp.</i>	<i>Pyrina</i>	<i>ataxensis var. globosa</i>
<i>Pygorhytis</i>	<i>tumulus</i>		<i>ataxensis var. pentagonalis, ataxensis var. tumida, cf. gigantea</i>
<i>Recrosalenia</i>	<i>jaisalmerensis</i>		
<i>Rhabdocidaris</i>	<i>sp.</i>	<i>Rhyncholampas</i>	<i>smithi</i>
<i>Salenia</i>	<i>arcotensis, blanfordi, frassi, keatingi, mathuri, tandoni,</i>	<i>Rhynchopygus</i>	<i>calderi, pygmaeus</i>
<i>Salmacis</i>	<i>sp.</i>	<i>(?) Salenia</i>	<i>sp.</i>

Genus	Species	Genus	Species
<i>Schizaster</i>	<i>aff. baylei, newboldi, cf. newboldi, sp.</i>	<i>Schizaster (Paraster)</i>	<i>baluchistanensis, baluchistanensis var., sufflatus</i>
(?) <i>Schizaster</i>	sp.		
<i>Schizaster</i> ( <i>Schizaster</i> )	<i>alveolatus, granti, simulans, sp.</i>	<i>Schizobrissus</i>	<i>insignis</i>
<i>Spatangus</i>	<i>acuminatus (?), elongatus, obliquatus, sp.</i>		
<i>Tamililampas</i>	<i>tumidus</i>	<i>Temnechinus</i>	<i>gajensis, stellulatus</i>
<i>Stomechinus</i>	sp.		
<i>Temnopleurus</i>	<i>aff. hardwicki, hookeri, simplex, toreumaticus var., valenciennesi</i>	<i>Toxaster</i>	<i>Cauveriae, compressa, jugamis</i>
		<i>Tridium</i>	<i>kieri</i>
<i>Troschelia</i>	<i>tuberculata</i>	(?) <i>Typocidaris</i>	sp.

### NEW TAXA RECORDED FROM THE INDIAN SUBCONTINENT

Sl. No.	Taxa	Recorded by
*1.	<i>Acrosalenia jaisalmerensis</i> (Sahni and Bhatnagar in Sahni)	Srivastava <i>et al.</i> , 2010
2.	<i>Coelopleurus (Keraiphorus) sp.</i>	Srivastava <i>et al.</i> , 2008(b)
*3.	<i>Ditremaster</i> sp.	Srivastava & Srivastava, 1990
4.	<i>Echinocyamus raoi</i>	Srivastava, 1978
5.	<i>Echinolampus garoensis</i>	Srivastava <i>et al.</i> , 2008(d)
6.	<i>E. guvarensis</i>	Srivastava and Singh, 1999
7.	<i>E. jigniensis</i>	Srivastava <i>et al.</i> , 1992
8.	<i>E. khariensis</i>	Srivastava & Singh, 1990
9.	<i>E. lepadiformis</i>	Srivastava & Singh, 1990
10.	<i>E. lipiformis</i>	Srivastava & Singh, 1990
11.	<i>E. lucae</i>	Srivastava & Singh, 1990
12.	<i>E. pipurensis</i>	Srivastava & Singh, 1990
13.	<i>Eupatagus (Eupatagus) rajasthanensis</i>	Srivastava and Singh, 2008
14.	<i>Eupatagus (Gymnopatagus) tandoni</i>	Srivastava, 1981
*15.	<i>Fibularia guvarensis</i>	Srivastava, 1978
*16.	<i>Gitolampas mcnamarae</i>	Srivastava <i>et al.</i> , 2008(d)
17.	<i>Gongrochanus ariyalurensis</i>	Srivastava, 2003(a)
*18.	<i>Hypselaster rajasthanensis</i>	Srivastava and Kulshreshtha, 2009
**19.	<i>Kachchhia krohi</i>	Srivastava <i>et al.</i> , 2008(a)
*20.	<i>Megapneustes jaisalmerensis</i>	Srivastava <i>et al.</i> , 2008(c)
21.	<i>Schizobrissus insignis</i>	Srivastava and McNamara, 2010
*22.	<i>Rhyncholampus smithi</i>	Srivastava <i>et al.</i> , 2008(d)
23.	<i>Salenia tandoni</i>	Srivastava, 1982
24.	<i>Schizaster</i> sp.	Srivastava <i>et al.</i> , 2008(b)
**25.	<i>Tridium kieri</i>	Tandon and Srivastava, 1980

\*\*New genera

\*Recorded for the first time from the Indian subcontinent

### STRATIGRAPHICAL DISTRIBUTION

#### PERMO/CARBONIFEROUS

*Archaeocidaris forbesiana*  
*Archaeocidaris rossica*

#### PERMIAN

*Archaeocidaris* sp.  
*Cidaris forbesiana*

### JURASSIC

*Acrosalenia jaisalmerensis*  
*Cidaris* sp.  
*Collyrites* cf. *bicordata*  
*Collyrites dorsalis*  
*Holectypus sarthacensis*  
*Pseudocidaris unigranulatus*

*Pseudocidaris* spines  
*Pseudodiadema cutchensis*  
*Pseudodiadema* sp.  
*Pygorhytis tumulus*  
*Recrosalenia jaisalmerensis*

*Rhabdocidaris* sp.  
*Salenia* sp. (?)  
*Stomechinus* sp.

## CRETACEOUS

<i>Botriopygus</i> sp.	<i>Gongrochanus ariyalurensis</i>	<i>Micropedina sphaerooides</i>
<i>Brissus expansus</i>	<i>Gongrochanus herschelianus</i>	<i>Nucleolites chirakhanensis</i>
<i>Brissus inaequalis</i>	<i>Goniopygus</i> sp.	<i>Nucleolites elongatus</i>
<i>Brissus rana</i>	<i>Hemiaster ameliae</i>	<i>Nucleolites malwaensis</i>
<i>Cardiaster orientalis</i>	<i>Hemiaster biplicata</i>	<i>Nucleolites pullatus</i>
<i>Cardiaster regularis</i>	<i>Hemiaster blanfordi</i>	<i>Nucleolites rajnathi</i>
<i>Cardiopygus cardus</i>	<i>Hemiaster expansus</i>	<i>Nucleolites similis</i>
<i>Cassidulus elatus</i>	<i>Hemiaster gabrielis</i>	<i>Nucleolites (Cassidulus) elatus</i>
<i>Cassidulus emys</i>	<i>Hemiaster aff. grossouvrei</i>	<i>Nucleolites (Pygorhynchus) planatus</i>
<i>Catopygus sulcatellus</i>	<i>Hemiaster orbignyanus</i> var. <i>minor</i>	<i>Nucleolites (Pygorhynchus) testudo</i>
<i>Cidaris faringdonensis</i>	<i>Hemiaster sexangulatus</i>	<i>Opissaster pullus</i>
<i>Cidaris hirudo</i>	<i>Hemiaster stoliczkai</i>	<i>Opissaster similis</i>
<i>Cidaris lacrymula</i>	<i>Hemiaster</i> sp.	<i>Orthopsis indica</i>
<i>Cidaris namadicus</i>	<i>Hemiaster (Hemiaster) carinatus</i>	<i>Orthopsis indicus</i>
<i>Cidaris sceptrifera</i>	<i>Hemiaster (Hemiaster) cenomensis</i>	<i>Orthopsis</i> sp.
<i>Cidaris subvesiculosus</i>	<i>Hemiaster (Hemiaster) indicus</i>	<i>Phymosoma namadicum</i>
<i>Cidaris suleimanei</i>	<i>Hemiaster (Hemiaster) rana</i>	<i>Plesiolampas elongata</i>
<i>Cidaris cf. subvesiculosus</i>	<i>Hemiaster (Hemiaster) similaris</i>	<i>Polycyphus rimuensis</i>
<i>Cidaris cf. vesiculosus</i>	<i>Hemiaster (Hemiaster) tuberosus</i>	<i>Polydiadema bosei</i>
<i>Cidaris</i> sp.	<i>Hemiaster (Hemiaster) vicinus</i>	<i>Progongrochanas crassus</i>
<i>Clypeolampas helios</i>	<i>Hemiaster (Malwaster) holoambitatus</i>	<i>Progongrochanas oldhamianus</i>
<i>Clypeolampas vishnu</i>	<i>Hemiaster (Malwaster) subsimilis</i>	<i>Progongrochanas planatus</i>
<i>Conoclypeus</i> cf. <i>ovatus</i>	<i>Hemiaster (Mecaster) chirakhanensis</i>	<i>Progongrochanas testudo</i>
<i>Conulus</i> sp.	<i>Hemiaster (Mecaster) cristatus</i>	<i>Proisaster coramandeli</i>
<i>Cyphosoma cenomanense</i>	<i>Hemiaster (Mecaster) frontacutus</i>	<i>Protechinus paucituberculatus</i>
<i>Cyphosoma namadicum</i>	<i>Hemiaster (Mecaster) herberti</i>	<i>Protechinus</i> sp.
<i>Cyphosoma speciale</i>	<i>Hemiaster (Mecaster) inaequalis</i>	<i>Pseudocidaris de-filippi</i>
<i>Cyphosoma</i> sp.	<i>Hemiaster (Mecaster) meslei</i>	<i>Pseudodiadema subangulatum</i>
<i>Diplopodia</i> sp.	<i>Hemiaster (Mecaster) pullus</i>	<i>Pseudodiadema</i> sp.
<i>Diplopodia</i> ( <i>Tetragramma</i> ) aff. <i>micropyga</i>	<i>Hemiaster (Mecaster) rarus</i>	<i>Pygopyrina pusilla</i>
<i>Discoidea</i> aff. <i>decorata</i>	<i>Hemiaster (Mecaster) saadensis</i>	<i>Pyrina ataxensis</i> var. <i>globosa</i>
<i>Discoidea</i> aff. <i>infra</i>	<i>Hemipneustes compressus</i>	<i>Pyrina ataxensis</i> var. <i>pentagonalis</i>
<i>Discoidea</i> sp.	<i>Hemipneustes indicus</i>	<i>Pyrina ataxensis</i> var. <i>tumida</i>
<i>Ditremaster tamulicus</i>	<i>Hemipneustes leymerieei</i>	<i>Pyrina</i> cf. <i>gigantea</i>
<i>Dorocidaris namadica</i>	<i>Hemipneustes pyrenaicus</i>	<i>Pyrina orientalis</i>
<i>Echinanthus griesbachi</i>	<i>Heteraster nobilis</i>	<i>Phymosoma mongraensis</i>
<i>Echinanthus pumilus</i>	<i>Heterodiadema libycum</i> var. <i>asiatica</i>	<i>Salenia arcotensis</i>
<i>Echinobrissus</i> cf. <i>angutier</i>	<i>Holaster indicus</i>	<i>Salenia fraasi</i>
<i>Echinobrissus goybeti</i>	<i>Holaster marinelli</i>	<i>Salenia keatingi</i>
<i>Echinobrissus haydeni</i>	<i>Holaster</i> sp.	<i>Salenia mathuri</i>
<i>Echinobrissus similis</i>	<i>Holectypus baluchistanensis</i>	(?) <i>Spatangus</i> sp.
<i>Echinobrissus subquadratus</i>	<i>Holectypus planatus</i>	<i>Tamillampas tumidus</i>
<i>Echinobrissus</i> sp.	<i>Holectypus</i> sp.	<i>Tetragramma depressum</i>
<i>Echinoconus</i> cf. <i>conicus</i>	<i>Limpasiaster ariyalurensis</i>	<i>Toxaster cauveriae</i>
<i>Echinoconus</i> cf. <i>douvillei</i>	<i>Limpasiaster pentagonelis</i>	<i>Toxaster compresa</i>
<i>Echinoconus</i> <i>gigas</i>	<i>Limpasiaster quadralis</i>	<i>Toxaster jugamis</i>
<i>Echinoconus</i> cf. <i>hemisphaericus</i>	<i>Linthia dainellii</i>	(?) <i>Typocidaris</i> sp.
<i>Echinoconus</i> <i>placentula</i>	<i>Linthia sindensis</i>	
<i>Echinocyamus kamrupensis</i>	<i>Mecaster mutabilis</i>	
<i>Echinoid</i> gen. et sp. indet.	<i>Micraster sexangulatus</i>	
<i>Globator depsangensis</i>	<i>Micropedina olisiponensis</i>	

## EOCENE

<i>Acanthechinus nodulosus</i>	<i>Echinocyamus nummuliticus</i> var. <i>oviformis</i>	<i>Linthia indica</i>
<i>Aeolopneustes de-lorioli</i>	<i>Echinocyamus nummuliticus</i> var. <i>planus</i>	<i>Linthia orientalis</i>
<i>Amblypygus altus</i>	<i>Echinocyamus polymorpha</i>	<i>Linthia</i> var.
<i>Amblypygus latus</i>	<i>Echinocyamus polymorpha</i> var. <i>sufflata</i>	<i>Macropneustes (Macropneustes) rotundus</i>
<i>Amblypygus moriensis</i>	<i>Echinocyamus rotundus</i>	<i>Macropneustes (Macropneustes) speciosus</i>
<i>Amblypygus patellaformis</i>	<i>Echinoid</i> gen. et sp. indet	<i>Megapneustes jaisalmerensis</i>
<i>Amblypygus pentagonalis</i>	<i>Echinolampas aequivoca</i>	<i>Metalia agariciformis</i>
<i>Amblypygus subtrotundus</i>	<i>Echinolampas alta</i>	<i>Metalia depressa</i>
<i>Amblypygus subtrotundus</i> var. <i>conicus</i>	<i>Echinolampas alta</i> var.	<i>Metalia scutiformis</i>
<i>Amblypygus tumidus</i>	<i>Echinolampas angustifolia</i>	<i>Metalia scutiformis</i> var. <i>rotunda</i> (?)
<i>Arachniopleurus reticulatus</i>	<i>Echinolampas damesi</i>	<i>Metalia</i> sp.
<i>Arachniopleurus reticulatus</i> var.	<i>Echinolampas discoideus</i>	<i>Micraster tumidus</i>
<i>Arachniopleurus semireticulatus</i>	<i>Echinolampas feddei</i>	<i>Micropsis venustula</i>
<i>Breynia carinata</i>	<i>Echinolampas garoensis</i>	<i>Micropsis</i> sp.
<i>Brissopatagus sindensis</i>	<i>Echinolampas haimei</i>	<i>Moira primaeva</i>
<i>Brissopsis apicalis</i>	<i>Echinolampas hanguensis</i>	<i>Megapneustes jaisalmerensis</i>
<i>Brissopsis scutiformis</i> (?)	<i>Echinolampas insignis</i>	<i>Neocatopygus rotundus</i>
<i>Brissopsis sowerbyi</i>	<i>Echinolampas jigniensis</i>	<i>Opechinus rousseau</i>
<i>Brissopsis sowerbyi</i> (?)	<i>Echinolampas juvenilis</i>	<i>Opechinus tuberculatus</i>
<i>Cassidulus ellipticus</i>	<i>Echinolampas kachensis</i>	<i>Opissaster carinatus</i>
<i>Cassidulus subinvaginatus</i>	<i>Echinolampas lipiformis</i>	<i>Opissaster symmetricus</i>
<i>Cidaris verneuili</i>	<i>Echinolampas pipurensis</i>	<i>Progonechinus eocenicus</i>
<i>Cidaris</i> sp.	<i>Echinolampas nummulitica</i>	<i>Paralampas minor</i>
<i>Cidaris</i> spines	<i>Echinolampas obesa</i>	<i>Paralampas pileus</i>
<i>Clypeaster affinis</i> (?)	<i>Echinolampas rotunda</i>	<i>Phyllacanthus ranikoti</i>
<i>Clypeaster apertus</i>	<i>Echinolampas sindensis</i>	<i>Phyllacanthus sindensis</i>
<i>Clypeaster circularis</i>	<i>Echinolampas sindensis</i> var. <i>hemisphaerica</i>	<i>Phyllacanthus</i> sp.
<i>Clypeaster varians</i>	<i>Echinolampas sphaeroidalis</i>	<i>Phylloclypeus</i> sp.
<i>Coelopleurus coronalis</i>	<i>Echinolampas subconica</i>	<i>Phymosoma nummuliticum</i>
<i>Coelopleurus pratti</i>	<i>Echinolampas subsimilis</i>	<i>Plesiolampas ovalis</i>
<i>Conoclypeus alveolatus</i>	<i>Echinolampas</i> sp.	<i>Plesiolampas placenta</i>
<i>Conoclypeus declivis</i>	<i>Echinometra thomsoni</i>	<i>Plesiolampas polygonalis</i>
<i>Conoclypeus flemingi</i>	<i>Echinus dubius</i>	<i>Plesiolampas praelonga</i>
<i>Conoclypeus galerus</i>	<i>Eolampas antecursor</i>	<i>Plesiolampas rostrata</i>
<i>Conoclypeus pilgrimi</i>	<i>Eolampas excentricus</i>	<i>Porocidaris anomala</i>
<i>Conoclypeus pinguis</i>	<i>Eupatagus (Eupatagus) affinis</i>	<i>Porocidaris</i> spines
<i>Conoclypeus pulvinatus</i>	<i>Eupatagus (Eupatagus) avellana</i>	<i>Prenaster (Prenaster) oviformis</i>
<i>Conoclypeus rostratus</i>	<i>Eupatagus (Eupatagus) avellana</i> (?)	<i>Prionocidaris canaliculata</i>
<i>Conoclypeus sindensis</i>	<i>Eupatagus (Eupatagus) cordiformis</i>	<i>Rhyncholampas smithi</i>
(?) <i>Conoclypeus</i> sp.	<i>Eupatagus (Eupatagus) patellaris</i>	<i>Rhynchopygus pygmaeus</i>
<i>Conoclypeus warthi</i>	<i>Eupatagus (Eupatagus) rajasthanensis</i>	<i>Rhynchopygus calderi</i>
<i>Conoclypeus</i> sp.	<i>Eupatagus (Eupatagus) rostratus</i>	<i>Salenia blanfordi</i>
<i>Cyphosoma abnormale</i>	<i>Eupatagus (Eupatagus) aff. rostratus</i>	<i>Salenia tandoni</i>
<i>Cyphosoma macrostoma</i>	<i>Eupatagus (Eupatagus) cf. rostratus</i>	<i>Schizaster newboldi</i>
<i>Cyphosoma undatum</i>	<i>Eupatagus (Eupatagus) singhi</i>	<i>Schizaster</i> sp. (?)
<i>Cyphosoma</i> sp.	<i>Eupatagus (Eupatagus) sufflatus</i>	<i>Schizaster (Paraster) baluchistanensis</i>
<i>Dictyopleurus d'archiac</i>	<i>Eupatagus (Gymnopatagus) tandoni</i>	<i>Schizaster (Paraster) baluchistanensis</i> var.
<i>Dictyopleurus haimei</i>	<i>Eurhodia calderi</i>	<i>Schizaster (Schizaster) alveolatus</i>
<i>Dictyopleurus haimei</i> var.	<i>Eurhodia morrisi</i>	<i>Schizaster (Schizaster) simulans</i>
<i>Dictyopleurus ziczac</i>	<i>Eurhodia morrisi</i> var. <i>salsensis</i>	<i>Schizaster (Schizaster) sp.</i>
<i>Ditremaster digonus</i>	<i>Eurygneutes grandis</i>	<i>Schizobrissus insignis</i>
<i>Ditremaster digonus</i> var. <i>kohaticus</i>	<i>Galerites pulvinatus</i>	<i>Schizobrissus insignis</i>
<i>Ditremaster elongatus</i>	<i>Gitolampas mcnamarae</i>	<i>Schizobrissus insignis</i>
<i>Ditremaster</i> sp.	<i>Hemiaster (Hemiaster) carinatus</i>	<i>Spatangus acuminatus</i> (?)
<i>Echinanthus enormis</i>	<i>Hemiaster (Hemiaster) decipiens</i>	<i>Spatangus elongatus</i>
<i>Echinanthus halensis</i>	<i>Hemiaster (Hemiaster) nobilis</i>	<i>Spatangus obliquatus</i>
<i>Echinanthus intermedius</i>	<i>Hemiaster (Mecaster)</i> sp.	<i>Tenmopleurus hookeri</i>
<i>Echinanthus profundi</i>	<i>Holectypoid</i> genus indeterminate	<i>Tenmopleurus valenciennesi</i>
<i>Echinocymus jaisalmerensis</i>	<i>Hypselaster rajasthanensis</i>	<i>Tridium kieri</i>
<i>Echinocymus nummuliticus</i>	<i>Ilarionia sindensis</i>	
<i>Echinocymus nummuliticus</i> var. <i>obesus</i>	<i>Kachchhia krohi</i>	

**OLIGOCENE**

<i>Breynia multituberculata</i>	<i>Echinocyamus nummuliticus</i> var.	<i>Echinolampas lucae</i>
<i>Cidaris verneuili</i>	<i>bernaniensis</i>	<i>Echinolampas placenta</i>
<i>Cidaris</i> sp.	<i>Echinocyamus polymorpha</i>	<i>Echinolampas radakensis</i>
<i>Clypeaster carteri</i>	<i>Echinocyamus raoi</i>	<i>Echinolampas tandoni</i>
<i>Clypeaster faloriensis</i>	<i>Echinolampas cookei</i>	<i>Echinolampas tumida</i>
<i>Clypeaster monticulifera</i>	<i>Echinolampas damesi</i>	<i>Echinolampas tumida</i> var.
<i>Clypeaster profundus</i>	<i>Echinolampas d' archiac</i>	<i>Echinolampas</i> sp.
<i>Clypeaster simplex</i>	<i>Echinolampas difficilis</i>	<i>Eupatagus (Eupatagus) rostratus</i>
<i>Clypeaster sowerbyi</i>	<i>Echinolampas discoideus</i>	<i>Eupatagus (Eupatagus) singhi</i>
<i>Clypeaster</i> sp.	<i>Echinolampas discoideus</i> var. $\beta$	<i>Eupatagus (Gymnopatagus) tandoni</i>
<i>Coelopleurus equis</i>	<i>Echinolampas discoideus</i> var. $\gamma$	<i>Schizaster</i> cf. <i>newboldi</i>
<i>Coelopleurus forbesi</i>	<i>Echinolampas feddei</i>	<i>Schizaster (Paraster) baluchistanensis</i>
<i>Coelopleurus pratti</i>	<i>Echinolampas guvarensis</i>	<i>Schizaster (Schizaster) granti</i>
<i>Echinanthus profundus</i>	<i>Echinolampas haimei</i>	

**MIOCENE**

<i>Breynia carinata</i>	<i>Echinocyamus lowraliensis</i>	<i>Goniocidaris</i> spines (?)
<i>Brissopsis harshadi</i>	<i>Echinocyamus polymorpha</i>	<i>Grammechinus regularis</i>
(?) <i>Brissopsis</i> sp.	<i>Echinocyamus raoi</i>	<i>Hipponoe antiqua</i>
<i>Brissus daviesi</i>	<i>Echinodiscus desori</i>	<i>Hipponoe proavia</i>
<i>Brissus</i> sp.	<i>Echinodiscus desori</i> var.	<i>Lepidopleurus granulaltus</i>
<i>Cidaris depressa</i>	<i>Echinodiscus ellipticus</i>	<i>Lepidopleurus hemisphaericus</i>
<i>Cidaris excelsa</i>	<i>Echinodiscus elongatus</i>	<i>Maretia ranjipurensis</i>
<i>Cidaris halaensis</i>	<i>Echinodiscus placenta</i>	(?) <i>Meoma (Schizobrissus)</i> sp.
<i>Cidaris opipara</i>	<i>Echinodiscus</i> sp.	<i>Moira (Moiopsis) antiqua</i>
<i>Cidaris</i> sp.	<i>Echinolampas indica</i>	(?) <i>Moira (Moiopsis)</i> sp.
<i>Cidaris</i> spines	<i>Echinolampas indica</i> var.	<i>Mortonia lowraliensis</i>
<i>Clypeaster carteri</i>	<i>Echinolampas jacquemonti</i>	<i>Opechinus affinis</i>
<i>Clypeaster complanatus</i>	<i>Echinolampas sindensis</i> var. <i>hemisphaerica</i>	<i>Opechinus costatus</i>
<i>Clypeaster depressus</i>	<i>Echinolampas sphaeroidalis</i>	<i>Opechinus rousseau</i>
<i>Clypeaster goirensis</i>	<i>Echinolampas sphaeroidalis</i> (?)	<i>Opechinus tuberculosus</i>
<i>Clypeaster kurangaensis</i>	<i>Echinolampas vicaryi</i>	<i>Prionocidaris excelsa</i>
<i>Clypeaster oblongus</i>	<i>Echinolampas wynnei Echinus stracheyi</i>	<i>Prionocidaris granulata</i>
<i>Clypeaster pelviformis</i>	<i>Echinus subcrenatus</i>	<i>Schizaster</i> sp.
<i>Clypeaster profundus</i>	<i>Eucidaris</i> spines	<i>Schizaster (Paraster) sufflatus</i>
<i>Clypeaster pulvinatus</i>	<i>Eupatagus (Eupatagus) patellaris</i>	<i>Schizaster (Schizaster) granti</i>
<i>Clypeaster waageni</i>	<i>Eupatagus (Eupatagus) rostratus</i>	<i>Temnechinus gajensis</i>
<i>Coelopleurus forbesi</i>	<i>Eupatagus (Eupatagus) singhi</i>	<i>Temnechinus stellulatus</i>
<i>Coelopleurus (Keraiphorus) sp.</i>	<i>Fibularia depressa</i>	<i>Temnopleurus hookeri</i>
<i>Coelopleurus sindensis</i>	<i>Fibularia guvarensis</i>	<i>Troschelia tuberculata</i>
<i>Cyphosoma nummuliticum</i>	<i>Fibularia ovulum</i>	
<i>Echinanthus profundus</i>	<i>Goniocidaris affinis</i>	

**PLIOCENE**

<i>Brissus</i> aff. <i>oblongus</i>	<i>Clypeaster suffarinatus</i>	<i>Salmacis</i> sp.
<i>Cidaris</i> spines	<i>Echinodiscus auritus</i> var.	<i>Schizaster</i> aff. <i>baylei</i>
<i>Cidaris</i> (?) <i>Goniocidaris</i> sp.	<i>Goniocidaris</i> aff. <i>affinis</i>	<i>Temnopleurus</i> aff. <i>hardwicki</i>
<i>Clypeaster</i> cf. <i>halaensis</i>	<i>Lagnum tumidum</i>	<i>Temnopleurus</i> <i>simplex</i>
<i>Clypeaster</i> aff. <i>scutiformis</i>	<i>Lovenia</i> aff. <i>elongata</i>	<i>Temnopleurus</i> <i>toreumaticus</i> var.

**GEOGRAPHICAL DISTRIBUTION**  
**INDIA**  
**ASSAM AND MEGHALAYA**

**CRETACEOUS**

**Devts Bridge, Khasi Hills**  
*Echinocyamus kamrupensis*  
*Goniopygus* sp.  
**Mahadeo, Khasi Hills**  
*Pyrina ataxensis* var. *pentagonelis*  
*Pyrina ataxensis* var. *tumida*  
**Mamluh – below the edge of cliff at Maosmai**  
*Conoclypeus* cf. *ovatus*

**EOCENE**

**Lairyngao, the northern most limit of limestone**  
*Echinolampas sphaeroidalis*  
**Siju Formation, Dhapsagiri village,**  
**South Garo Hills**  
*Echinolampas garoensis*  
*Gitolampas mcnamarae*  
*Rhyncholampas smithi*

**Locality undescribed**  
*Gongrochanus herschelianus*  
**Khasi Hills**  
*Discoidea* aff. *infra*  
*Gongrochanus herschelianus*  
*Hemaster* sp.

**Tharia Ghat**  
*Cidaris* sp.  
*Discoidea* sp.  
*Echinoconus* cf. *douvillei*  
*Echinoconus* cf. *hemisphaericus*  
*Gongrochanus herschelianus*  
*Hemaster* sp.

**JURASSIC**

**North of Akala Hills, Northwest of Jumara**  
*Pseudocidaris unigranulatus*  
*Pseudocidaris* spines  
**Laix**  
(?) *Cidaris* sp.  
**EOCENE**

**Babia Hill**  
*Clypeaster affinis* (?)  
*Clypeaster varians*  
*Echinus dubius*  
*Galerites pulvinatus*  
*Spatangus acuminatus* (?)  
*Spatangus elongatus*  
*Spatangus obliquatus*  
**North and east of Bair**  
*Conoclypeus flemingi*  
**East of Goir**  
*Echinolampas damesi*  
*Echinolampas feddeni*  
*Echinolampas insignis*  
**North of Harudi**  
*Ditremaster* sp.

**3 km SSE of Harudi Village**  
*Kachchhia krohi*  
**Khari**  
*Echinolampas khariensis*  
**NNE of Pipur**  
*Echinolampas lipiformis*  
*Echinolampas pipurensis*  
**OLIGOCENE**

**Alrasa** (?)  
*Schizaster* (*Schizaster*) *granti*  
**Babia Hill**  
*Clypeaster faloriensis*  
**Between Bayow and Didapur**  
*Echinolampas* sp.  
**Khari**  
*Eupatagus* (*Eupatagus*) *rostratus*  
**Mori**  
*Echinolampas haimei*  
**Ratipar**  
*Echinolampas haimei*  
*Echinolampas tandoni*  
**Lakhpat**  
*Echinolampas tandoni*

**Jooria Hills, North of Bhuj**  
*Collyrites* cf. *bicordata*  
*Pygorhytis tumulus*  
**Southeast of Jooria Hills**  
*Rhabdocidaris* sp.

**Ratipar**  
*Amblypygus altus*  
*Amblypygus pentagonelis*  
**Mori**  
*Amblypygus moriensis*  
**Bermota**  
*Holcotypoid* genus indeterminate  
**Jhadwa**  
*Tridium kieri*  
**Near Golai**  
*Echinanthus profundus*  
**SW of Guvar**  
*Salenia tandoni*  
*Tridium kieri*  
**Near Wage ka Pudda**  
*Clypeaster varians*  
*Echinolampas kachensis*  
*Echinus dubius*  
**Kapfoorassir and edge of Koree estuary**  
*Coelopleurus pratti*  
**Panandro**  
*Tridium kieri*

**Bermota**  
*Echinocyamus nummuliticus* var. *bernaniensis*  
*Echinocyamus polymorpha*  
*Echinocyamus raoi*  
*Eupatagus* (*Eupatagus*) *rostratus*  
*Eupatagus* (*Eupatagus*) *singhi*  
*Eupatagus* (*Eupatagus*) *tandoni*  
**Kapfoorassir and edge of Koree Estuary**  
*Eupatagus* (*Eupatagus*) *patellaris*  
*Eupatagus* (*Eupatagus*) *rostratus*  
**Jhadwa**  
*Echinocyamus polymorpha*  
*Echinolampas feddeni*  
*Eupatagus* (*Eupatagus*) *rostratus*

**Lody Hills, Meanee**  
*Collyrites dorsalis*  
*Holectypus sarthacensis*  
*Pseudodiadema cutchenensis*  
*Stomenchinus* sp.

**East of Bair between Maniara Fort Hill and Karray**  
*Amblypygus altus*  
*Amblypygus pentagonelis*  
*Arachniopleurus* var. *reticulatus*  
*Echinolampas alta*  
*Echinolampas alta* var.  
*Hemaster* (*Hemaster*) *decipiens*  
*Hemaster* (*Hemaster*) sp.  
*Opissaster carinatus*  
*Schizaster* var. *baluchistanensis*  
*Schizobrissus insignis*  
**Ratchelo nala**  
*Tridium kieri*  
**Hala Range**  
*Echinolampas subsimilis*  
**Jongrea**  
*Clypeaster affinis* (?)  
**West of Jungia and North of Iera**  
*Clypeaster apertus*  
*Echinolampas haimei*  
*Echinolampas* sp.

**Guvar**  
*Echinocyamus polymorpha*  
*Echinolampas cookei*  
*Echinolampas damesi*  
*Echinolampas guvarensis*  
*Echinolampas lucae*  
*Echinolampas tandoni*  
*Eupatagus* (*Eupatagus*) *rostratus*  
*Eupatagus* (*Eupatagus*) *affinis*  
**NNE of Pipur**  
*Clypeaster carteri*  
*Clypeaster sowerbyi*  
*Echinocyamus polymorpha*  
**NE of Pipur**  
*Eupatagus* (*Eupatagus*) *rostratus*

**MIocene****North of Akri, South of Bair**

- Opechinus rousseau*  
*Alrasa*  
*Schizaster (Schizaster) granti*  
**Near Bair**  
*Breynia carinata*  
*Echinolampas indica*  
*Echinolampas jacquemonti*  
*Echinolampas sphaeroidalis*  
**Near Butta**  
*Breynia carinata*  
**NW of Hikelu Hill**  
*Troschelia: tuberculata*  
**Between Joongrea and Kotra**  
*Clypeaster oblongus*  
**Soomrow**  
*Clypeaster depressus*

- Falora river, near Babia Hill**  
*Clypeaster depressus*  
**East of Guvar**  
*Clypeaster depressus*  
*Clypeaster goirensis*  
*Clypeaster waageni*  
*Echinolampas indica*  
*Echinolampas jacquemonti*  
*Echinolampas sphaeroidalis*  
**West of Junagea and North of Iera**  
*Echinolampas vicaryi*  
**NW of Kayari, near Narain Sarover**  
*Echinodiscus desori*

- At Ukree**  
*Temnopleurus hookeri*  
**Wahior stream, near Chiropira**  
*Echinolampas jacquemonti*  
*Echinolampas sphaeroidalis*  
*Euspatangus patellaris*  
**Wamuti**  
*Echinolampas indica*  
*Echinolampas indica var.*  
*Echinolampas wyneei*  
*Moira (Moiopsis) antiqua*  
**Near Warsar, North of Jakao**  
*Cidaris halaensis*  
*Goniocidaris affinis*  
*Goniocidaris (?) spines*  
**Locality undescribed**  
*Coelopleurus forbesi*

**KATHIWAR****MIocene**

- Bannasa Nana**  
*Clypeaster depressus*  
*Clypeaster pelviformis*  
*Clypeaster profundus*  
*Clypeaster pulvinatus*  
*Clypeaster waageni*  
*Opechinus affinis*  
*Opechinus costatus*  
*Opechinus rousseau*  
*Opechinus tuberculosus*  
**North of Viswara (Porbander)**  
(?) *Brissopsis* sp.

- Kuranga**  
*Clypeaster carteri*  
*Clypeaster goirensis*  
*Clypeaster pelviformis*  
*Clypeaster profundus*  
*Clypeaster pulvinatus*  
*Fibularia ovulum*  
*Opechinus affinis*  
*Opechinus costatus*  
*Opechinus rousseau*  
*Opechinus tuberculosus*

- North of Gaga and SE of Gurgat**  
*Cidaris depressa*  
*Cidaris granulata*  
*Eupatagus (Eupatagus) patellaris*  
*Schizaster (Schizaster) granti*  
*Opechinus affinis*  
*Opechinus costatus*  
*Opechinus rousseau*  
*Opechinus tuberculosus*  
**East of Lowarli, Oka mandol**  
*Grammechinus regularis*

**Ran jitpur**

- Brissopsis harshadae*  
*Brissus daviesi*  
*Clypeaster complanatus*  
*Clypeaster depressus*  
*Clypeaster pelviformis*  
*Clypeaster profundus*  
*Clypeaster waageni*  
*Coelopleurus forbesi*  
*Coelopleurus sindensis*  
*Maretia ranjitpurensis*  
*Moira (Moiopsis) antiqua*  
*Prionocidaris excelsa*  
*Prionocidaris granulata*  
*Schizaster (Schizaster) granti*

- Between Maniara foot Hill and Karray**  
*Arachniopleurus reticulatus*  
**Kuranga Railway Station**  
*Clypeaster carteri*  
*Clypeaster pelviformis*  
*Clypeaster pulvinatus*  
*Clypeaster kurangaensis*  
*Maretia ranjitpurensis*  
*Prionocidaris excelsa*  
**Locality undescribed**  
*Cidaris halaensis*  
*Clypeaster depressus*  
*Coelopleurus forbesi*  
*Eucidaris spines*

- Bhatvadia**  
*Clypeaster carteri*  
*Clypeaster depressus*  
*Clypeaster goirensis*  
*Maretia ranjitpurensis*  
*Prionocidaris excelsa*  
**Lowrali**  
*Breynia carinata*  
*Fibularia depressa*  
*Fibularia ovulum*  
*Grammechinus regularis*  
*Moira (Moiopsis) antiqua*  
*Echinocyamus lowraliensis*  
*Echinocyamus polymorpha*  
*Echinocyamus raoi*

**HIMACHAL PRADESH  
SPITI****JURASSIC**

- Locality undescribed**  
(?) *Salenia* sp.

**EOCENE**

- Jigni**  
*Echinolampas jigniensis*

- Metka (1 km east of Jigni)**  
*Echinolampas jigniensis*

- 0.75 km south of Sair, district Rajauri**  
*Echinolampas jigniensis*

**JAMMU AND KASHMIR  
JAMMU HIMALAYA**

**KARAKORAM****PERMO - CARBONIFEROUS****Cip Ciak***Archaeocidaris* sp.**CRETACEOUS****Kisil***Echinobrissus* sp.*Globator depsangensis***North of Rimu***Polycyphus rimuensis**Pseudocidaris defilippi**(?) Typocidaris* sp.**Lingzi - Tang***Diplopodia* sp.*Hemiaster ameliae**Hemiaster gabrielis**Hemiaster orbignyanus* var. *minor**Hemiaster stoliczkai**Hemiaster* sp.**PERMIAN****Kunlun***Archaeocidaris rossica***JURASSIC****Locality undescribed (North Kashmir)***Cidaris* sp.**KASHMIR****MADHYA PRADESH  
NARMADA (NARBADA)****CRETACEOUS****Rampura***Hemiaster* (*Malwaster*) *holoambitatus**Hemiaster* (*Malwaster*) *subsimilis***Guneri***Hemiaster* (*Malwaster*) *subsimilis***Mahakal***Hemiaster* (*Malwaster*) *subsimilis***Bagh***Hemiaster* (*Malwaster*) *holoambitatus**Hemiaster* (*Malwaster*) *subsimilis***Walpur***Hemiaster* (*Malwaster*) *holoambitatus**Hemiaster* (*Malwaster*) *subsimilis***Khadlu***Hemiaster* (*Malwaster*) *holoambitatus***Bowarla***Cidaris* *namadicus**Hemiaster* (*Hemiaster*) *cenomanensis**Hemiaster* (*Mecaster*) *chirakhanensis**Hemiaster* (*Mecaster*) *heberti**Hemiaster* (*Mecaster*) *meslei**Phymosoma* *namadicum***South of Kaherda***Phymosoma* *namadicum***Kherwan***Cidaris* *namadicus**Phymosoma* *namadicum***Badia***Hemiaster* (*Mecaster*) *meslei***Mongra***Hemiaster* (*Malwaster*) *holoambitatus**Phymosoma* *mongraensis**Polydiadema* *bosei***Bagh Beds (Locality undescribed)***Phymosoma* *namadicum**Diplopodia* (*Tetragramma*) aff. *micropyga**Dorocidaris* *namadica**Echinobrissus* cf. *anguier**Echinobrissus* *haydeni**Echinobrissus* *similis*,*Echinobrissus* *subquadratus**Echinobrissus* sp.*Hemiaster* (*Hemiaster*) *cenomanensis**Hemiaster* (*Malwaster*) *holoambitatus**Hemiaster* (*Mecaster*) *chirakhanensis**Hemiaster* (*Mecaster*) *fourtau**Hemiaster* (*Mecaster*) *heberti**Hemiaster* (*Mecaster*) *meslei**Hemiaster* (*Mecaster*) *saadensis**Nucleolites* *chirakhanensis**Nucleolites* *malwaensis**Nucleolites* *rajnathi**Opiaster* *subsimilis**Opiaster* sp.*Orthopsis* *indica**Orthopsis* *indicus**Salenia* *keatingi**Salenia* *mathuri***Oudiapura and Chirakan***Cidaris* *cenomanensis**Orthopsis* *similis***Zirabad***Hemiaster* (*Mecaster*) *meslei***Badia***Hemiaster* (*Mecaster*) *meslei***Chirakan***Cidaris* *namadicus**Echinobrissus* *goybeti**Hemiaster* (*Hemiaster*) *cenomanensis**Hemiaster* (*Malwaster*) *holoambitatus**Hemiaster* (*Malwaster*) *subsimilis**Hemiaster* (*Mecaster*) *chirakhanensis**Hemiaster* (*Mecaster*) *heberti**Hemiaster* (*Mecaster*) *meslei**Nucleolites* *chirakhanensis**Nucleolites* *elongatus**Nucleolites* *malwaensis**Nucleolites* *rajnathi**Nucleolites* *similis**Orthopsis* *indicus**Salenia* *fraas***Sitapuri***Hemiaster* (*Hemiaster*) *cenomanensis**Hemiaster* (*Malwaster*) *holoambitatus**Hemiaster* (*Malwaster*) *subsimilis**Hemiaster* (*Mecaster*) *chirakhanensis**Hemiaster* (*Mecaster*) *heberti**Hemiaster* (*Mecaster*) *meslei**Hemiaster* (*Mecaster*) *rarus**Nucleolites* *chirakhanensis**Nucleolites* *malwaensis**Nucleolites* *rajnathi**Phymosoma* *namadicum**Salenia* *mathuri***Narbada Valley***Diplopodia* (*Tetragramma*) aff. *micropyga***MIZORAM****LOWER TO MIDDLE MIocene****South Hlimen Quarry, 5 km South of Aizawl***Coelopleurus* (*Keraiphorus*) sp.*Schizaster* sp.**JURASSIC****About 200 m north of Jaisalmer***Acrosalenia* *jaisalmerensis***RAJASTHAN****EOCENE****7.5 km S80E of Ramgarh, district Jaisalmer***Echinocyamus* *jaisalmerensis***Near Parivar village, district Jaisalmer***Megapneustes* *jaisalmerensis***About 600 m northwest of Sanu, district Jaisalmer***Hyselaster* *rajasthanensis***About 625 m west of Habur, district Jaisalmer***Eupatagus* (*Eupatagus*) *rajasthanensis*

**TAMILNADU  
SOUTH INDIA  
CRETACEOUS**

**TRICHINOPOLY**

**Andur**  
*Progongrochanus crassus*  
**Ariyalur**  
*Botriopygus* sp.  
*Cardiaster orientalis*  
*Gongrochanus ariyalurensis*  
*Hemiaster (Mecaster) pullus*  
*Progongrochanus crassus*  
(?) *Pseudodiadema* sp.  
**SE of Ariyalur**  
*Cidaris* sp.  
*Hemiaster (Hemiaster) indicus*  
**11.2 NE of Ariyalur**  
*Cardiopygus cardus*  
*Gongrochanus ariyalurensis*  
*Gongrochanus herschelianus*  
*Hemipneustes indicus*  
*Limpasiaster ariyalurensis*  
*Limpasiaster pentagonelis*  
*Limpasiaster quadralis*  
*Progongrochanus ariyalurensis*  
*Progongrochanus bellus*  
*Progongrochanus crassus*  
*Progongrochanus oldhamianus*  
*Progongrochanus planatus*  
*Progongrochanus testudo*  
*Tamillampas tumidus*  
**Uttattur**  
*Hemiaster (Hemiaster) similaris*  
*Hemiaster (Mecaster) front-acutus*  
*Hemiaster (Mecaster) inaequalis*

**VIRDHACHALAM**

**Yermanoor**  
*Catopygus sulcatellus*  
*Gongrochanus herschelianus*  
(?) **Virdhachalam or Pondicherry**  
*Brissus expansus*  
*Brissus inaequalis*  
*Brissus rana*  
*Holaster indicus*  
*Nucleolites (Cassidulus) planatus*  
*Nucleolites (Cassidulus) testudo*

**MIocene**

Edvai, about 4.8 km NNW of Warkali, Travancore coast:  
*Breynia carinata*

**PAKISTAN  
BALUCHISTAN**

**CRETACEOUS**

**Des Valley**  
*Cidaris suleimanei*  
*Clypeolampas helios*  
*Cyphosoma speciale*  
*Cyphosoma* sp.  
*Ditrimaster tamulicus*  
*Echinanthus griesbachi*  
*Hemiaster blanfordi*  
*Hemiaster (Hemiaster) cenomanensis*  
*Hemipneustes compressus*  
*Hemipneustes leymeriei*  
*Hemipneustes pyrenaicus*  
*Holectypus baluchistanensis*  
*Orthopsis perlata*  
*Protechinus paucituberculatus*  
*Protechinus* sp.

**Comarapolliam**  
*Echinoconus cf. conicus*  
*Salenia arcotensis*  
*Gongrochanus herschelianus*  
**Karapaudy**  
*Cardiaster orientalis*  
*Cardiaster regularis*  
*Echinoconus placentula*  
*Hemiaster (Mecaster) cristatus*  
*Hemiaster (Hemiaster) tuberosus*  
*Pseudodiadema subangulatum*  
**Kudoor**  
*Gongrochanus herschelianus*  
**Odium**  
*Cassidulus emys*  
**Olapaudy**  
*Cardiaster orientalis*  
*Cidaris sceptrifera*  
**East of Olapaudy**  
*Heteraster nobilis*  
**East of Ottakovil**  
*Gongrochanus herschelianus*  
**Poodopolliam**  
*Progongrochanus crassus*  
*Progongrochanus oldhamianus*  
*Micropedina sphaerooides*

**Moraviatooor**  
*Cidaris faringdonensis*  
*Cidaris hirudo*  
*Cidaris subvesiculosa,*  
*Cidaris cf. subvesiculosa*  
*Cidaris cf. vesiculos*  
*Progongrochanus planatus*  
**South of Moraviatooor**  
*Hemiaster (Hemiaster) vicinus*  
**Mulloor**  
*Holectypus* sp.  
*Nucleolites: pullatus*  
*Pseudodiadema* sp.  
**SE of Mulloor**  
*Hemiaster (Hemiaster) tuberosus*  
**SW of Mulloor**  
*Hemiaster (Mecaster) cristatus*  
*Hemiaster (Hemiaster) indicus*  
*Heteraster nobilis*  
*Proisaster coramandeli*  
*Toxaster cauveriae*  
*Toxaster compressa*  
*Toxaster jugami*  
**East of Seradamungalum**  
*Hemiaster (Hemiaster) indicus*  
**Chokanadapuram**  
*Orthopsis similis*

**Pondicherry**  
*Progongrochanus testudo*  
*Hemiaster sexangulatus*  
*Hemiaster (Hemiaster) rana*  
*Holaster indicus*  
**West of Rautankupam**  
*Ditremaster tumulicus*  
*Hemiaster biplicata*  
*Opissaster pullus*

**Vailoor**  
*Progongrochanus crassus*  
**Pondicherry or Uttatur**  
*Hemiaster expansus*  
**Locality undescribed**  
*Micraster sexangulatus*  
(?) *Spatangus* sp.  
**Virdhachalam**  
*Cassidulus elatus*

*Pyrina ataxensis* var. *globosa*  
*Pyrina ataxensis* var. *pentagonalis*  
*Pyrina ataxensis* var. *tumida*  
*Pyrina* cf. *gigantea*  
*Pyrina orientalis*  
**Jhalwan**  
*Ditrimaster tamulicus*  
**Mazar Drik**  
*Clypeolampas helios*  
*Clypeolampas vishnu*  
*Echinanthus griesbachi*  
*Echinoconus gigas*  
*Ditrimaster tamulicus*  
*Hemipneustes compressus*  
*Hemipneustes pyrenaicus*

*Pyrina orientalis*  
**Sphenodiscus Beds**  
*Cidaris suleimanai*  
*Clypeolampas helios*  
*Clypeolampas vishnu*  
*Echinanthus griesbachi*  
*Hemiaster blanfordi*  
*Hemiaster (Hemiaster) cenomanensis*  
*Hemipneustes compressus*  
*Holectypus baluchistanensis*  
*Orthopsis perlata*  
*Protechinus paucituberculatus*  
*Protechinus* sp.  
*Pyrina gigantea*

**EOCENE**

**Robat koh - i - Malik - Siah**  
*Arachniopleurus semireticulatus*  
**Sandak**  
*Micropsis venustula*

**Taghar Valley, Chukerani, Pasta Mara Kadji, Karvada and Barkan Valley**  
*Brissopsis sowerbyi*  
*Cidaris verneuili*  
*Conoclypeus flemingi*  
*Schizaster baluchistanensis*  
*Schizaster newboldi*

**OLIGOCENE**

**Locality undescribed**  
*Breynia multituberculata*

**MIocene**

**Between Spintangi and Lower Siwaliks**  
*Breynia carinata*

**KOHAT****CRETACEOUS****48 km west of Kohat in Samana Range**

*Conulus* sp.  
*Discoidea* aff. *decorata*  
Echinoid gen. et sp. indet.  
*Holaster* sp.

**EOCENE**

**6.5 to 9.5 km east of Kohat in Alveolina limestone Zone**  
*Conoclypeus piligrimi*  
**Dhak Pass and Majuchh nullah (Khatrabad Limestone)**  
*Plesiolampas placenta*  
**Hangu Shale near Hangu**  
*Echinolampas hanguensis*  
**Patala Shale near Patala nullah**  
*Dictyopleurus ziczac*  
**Shekhan Limestone near Shadi khel, Sumari Pajan Bagattu, Hangu and Rohat**  
*Brissopsis sowerbyi*

**Kohat Shale near Kohat and Bahadur Khel**  
*Ditremaster digonus* var. *kohaticus*  
*Schizaster* sp.  
**Kohat Shale – just North of Kohat and also near Bahadur Khel**  
*Micropsis* sp.  
**About 20 km South of Kohat**  
*Conoclypeus piligrimi*  
*Prionocidaris canaliculata*  
*Schizaster* (*Schizaster*) *simulans*  
**Jutana**  
*Conoclypeus warthi*

**About 45 m below the top of Shekhan Limestone sequence at Panoba**  
*Micraster tumidus*  
**Shekhan Limestone near Panoba, Shadi khel and Sarozai**  
*Ditremaster digonus*  
**Shekhan Limestone near Sumari Bala**  
*Amblypygus subrotundus*  
**Shekhan Limestone near Shadi khel and Bagattu**  
*Eupatagus* (*Eupatagus*) *sufflatus*  
**Shekhan Limestone near Shekhan nullah**  
*Brissopsis apicalis*

**MAKRAN****PLIOCENE**

**Henjam Island, Persian Gulf**  
*Brissus* aff. *oblongus*  
*Cidaris* sp.  
*Cidaris* spines  
*Cidaris* (?) *Goniocidaris* sp.  
*Clypeaster* aff. *scutiformis*  
*Goniocidaris* aff. *affinis*

*Lovenia* aff. *elongata*  
*Schizaster* aff. *baylei*  
*Temnopleurus* aff. *hardwicki*  
*Temnopleurus* *toreumaticus* var.  
**Kharak Island, Persian Gulf**  
*Clypeaster* cf. *halaensis*  
*Clypeaster suffarinatus*

*Echinodiscus auritus* var.  
*Laganum tumidum*  
**Qishm Island**  
*Temnopleurus* *toreumaticus* var.  
**Ras Malan, Makran Coast deposits**  
*Salmacis* sp.  
*Temnopleurus simplex*

**SALT RANGE****PERMIAN**

**Katta, Golawali, Chidru and Bazarwan**  
*Archaeocidaris forbesiana*

**Rotta Roh**  
*Cidaris forbesiana*

**EOCENE**

**Dhak Pass**  
*Ditremaster elongatus*  
*Eurhodia morrisi* var. *salsenisis*  
*Plesiolampas ovalis*  
**Majuchh nullah**  
*Ditremaster elongatus*  
*Eurhodia morrisi* var. *salsenisis*  
*Plesiolampas ovalis*

**Kalabagh and Karundi, near Sheikh Budin**  
*Conoclypeus flemingi*  
**Patala nullah (Khairabad Limestone)**  
*Conoclypeus* sp.  
**Ratuchha**  
*Echinocyamus nummuliticus*  
**Kalla Kahar**  
*Plesiolampas ovalis*

**South of Sokan**  
*Ditremaster elongatus*  
**Near Sokan**  
*Eurhodia morrisi* var. *salsenisis*  
**Near Thal (Ranikot Beds)**  
*Eurhodia morrisi* var. *salsenisis*  
**Choa saidan Shah**  
*Echinocyamus nummuliticus*  
**Locality undescribed**  
*Ditremaster digonus*

**SIND****CRETACEOUS**

**West of Amri (below Jakhamari Peak) – Laki Range**  
*Cidaris lacrymula*  
*Linhzia sindensis*  
*Plesiolampas elongata*

**Barki nala, hills North of Ranikot – Laki Range**  
*Echinanthus pumilus*

**EOCENE****Hala Range**

*Breynia carinata*  
*Brissopsis scutiformis*  
*Brissopsis sowerbyi*  
*Cidaris verneuili*  
*Cidaris* sp.

*Coelopleurus coronalis*

*Conoclypeus flemingi*

*Ditremaster digonus*

*Echinanthus halaensis*

*Echinolampas sindensis*

*Echinolampas sphaeroidalis*

*Echinolampas subsimilis*

*Echinometra thomsoni*

*Eupatagus (Eupatagus) (?) avellana*

*Eupatagus (Eupatagus) patellaris*

*Eupatagus (Eupatagus) cf. rostratus*

*Eurhodia morrisi*

*Eurhodia morrisi*

*Opechinus tuberculosus*

*Phymosoma nummuliticum*

*Schizaster newboldi*

*Schizaster (Paraster) baluchistanensis*

*Temnopleurus hookeri*

*Temnopleurus valenciennesi*

**Aongar Hill**

*Brissopsis sowerbyi*

**Aongar Hill, North of Jhirak**

*Brissopsis sowerbyi*

**Aongar Hill, East of Meting Rly. Stn.**

*Metalia agariciformis*

**Bolari bridge on Baran River**

*Ditremaster digonus*

*Echinolampas* sp.

*Hemiaster (Hemiaster)* sp.

**East of Bula Khan**

*Eupatagus (Eupatagus) avellana*

**Baili, West of Tong**

*Brissopatagus sindensis*

*Cassidulus subinvaginatus*

*Conoclypeus pinguis*

*Echinanthus intermedius*

*Echinolampas angustifolia*

*Echinolampas juvenilis*

*Echinolampas sindensis*

*Echinolampas* sp.

*Ilarionia sindensis*

*Linthia orientalis*

*Micraster tumidus*

*Schizaster simulans*

**NE of Ghatana Trig Stn.**

*Brissopsis sowerbyi*

**SW of Jhirak**

*Echinolampas angustifolia*

**NE of Jung Shahi Rly. Stn.**

*Brissopsis sowerbyi*

*Metalia* sp.

*Rhynchopygus pygmaeus*

**Kambhu Ridge**

*Amblypygus tumidus*

**East of Kandaira**

*Ditremaster digonus*

*Rhynchopygus calderi*

**Karothur Hill, ENE of Jung Shahi**

*Brissopsis sowerbyi*

*Eolampas excentricus*

*Eupatagus (Eupatagus) sufflatus*

*Rhynchopygus pygmaeus*

**NW of Kotri**

*Echinocyamus nummuliticus*

*Rhynchopygus pygmaeus*

**Kuni Range, east of Trak**

*Amblypygus subrotundus*

*Amblypygus subrotundus* var. *conicus*

**North of Maliri**

*Eupatagus (Eupatagus) avellana*

**NE of Meting**

*Brissopsis sowerbyi*

*Echinocyamus rotundus*

*Echinolampas lepadiformis*

**SE of Meting**

*Brissopsis sowerbyi*

**SSE of Meting**

*Ditremaster digonus*

*Eolampas excentricus*

*Metalia agariciformis*

*Rhynchopygus pygmaeus*

**Near meting Rly. Stn.**

*Metalia scutiformis*

*Metalia* sp.

*Rhynchopygus pygmaeus*

**East of Trak**

*Amblypygus subrotundus*

*Amblypygus subrotundus* var. *conicus*

*Conoclypeus rostratus*

*Echinolampas nummulitica*

*Echinolampas rotunda*

**Trak Hill, South of Bula Khan Thana**

*Echinolampas aequivoca*

**Uncertain (?) Ranikot Limestone**

*Progonechinus eocenicus*

**Ranikot Series, NE of Band Vero**

*Linthia indica*

*Linthia* sp.

**Gari wari Gorge**

*Schizaster (Schizaster) alveolatus*

**East of Khandaira in Vero plain**

*Plesiolampas praelonga*

**Hills of Lynyan**

*Acanthechinus nodululosus*

*Cidaris* spines

*Conoclypeus declivis*

(?) *Conoclypeus* sp.

*Dictyopleurus d' archiac*

*Dictyopleurus haimei*

*Dictyopleurus haimei* var.

*Echinanthus enormis*

*Eolampas antecursor*

*Neocatopygus rotundus*

*Paralampas minor*

*Paralampas pileus*

*Phyllacanthus ranikoti*

*Phyllacanthus spines*

(?) *Phylloclypeus* sp.

**NE of Petiani, West of Kotri**

*Cidaris verneuili*

*Cidaris* sp.

*Phyllacanthus* sp.

*Salenia blanfordi*

**South of Band Vero**

*Brissopsis sowerbyi*

**West of Bhagothoro Hill**

*Breynia carinata*

**South of Bolari**

*Brissopsis sowerbyi*

**Gorge of Baran River**

*Amblypygus subrotundus*

*Amblypygus subrotundus* var. *conicus*

*Brissopsis apicalis*

*Echinocyamus nummuliticus* var. *obesus*

*Eupatagus (Eupatagus) avellana*

**NE of Bula Khan's Thana**

*Brissopsis apicalis*

*Eupatagus (Eupatagus) avellana*

(?) *Schizaster (Schizaster)* sp.

**Eri Hill**

*Amblypygus subrotundus*

*Amblypygus subrotundus* var. *conicus*

**Gagar Hill, East of Surjana Range**

*Eupatagus (Eupatagus) avellana*

*Micropsis venustula*

*Prionocidaris canaliculata*

**West of Ganja Hills**

*Eupatagus (Eupatagus) avellana*

**NE of Kale - Ka - Kua**

*Amblypygus subrotundus*

*Amblypygus subrotundus* var. *conicus*

*Metalia scutiformis*

**Karr Range, south Trak**

*Eupatagus (Eupatagus) avellana*

*Eupatagus (Eupatagus) rostratus*

*Hemiaster (Hemiaster)* sp.

*Rhynchopygus pygmaeus*

**Kehuiria - ka - Lak**

*Eupatagus (Eupatagus) avellana*

*Metalia scutiformis*

**Near Kotri**

*Amblypygus subrotundus*

*Amblypygus subrotundus* var. *conicus*

*Conoclypeus pinguis*

*Eupatagus (Eupatagus) avellana*

<i>Metalia scutiformis</i>	<i>Plesiolampas polygonalis</i>	<i>Echinocymus nummuliticus</i> var. <i>oviformis</i>
<b>Mairi Valley</b>	<i>Plesiolampas rostrata</i>	<i>Echinocymus nummuliticus</i> var. <i>planus</i>
<i>Eupatagus (Eupatagus) avellana</i>	<i>Prenaster oviformis</i>	<i>Echinolampas obsa</i>
<i>Metalia scutiformis</i>	<i>Rhynchopygus calderi</i>	<i>Echinolampas subconica</i>
<b>East of Meting</b>	<i>Rhynchopygus pygmaeus</i>	<i>Eolampas excentricus</i>
<i>Rhynchopygus calderi</i>	<b>NE of Petiani, West of Kotri</b>	<i>Eupatagus (Eupatagus) avellana</i>
<i>Rhynchopygus pygmaeus</i>	<i>Cidaris verneuli</i>	<i>Hemaster (Hemaster) carinatus</i>
<b>Phitto, West of Dharam Pass</b>	<i>Cidaris sp.</i>	<i>Hemaster (Hemaster) sp.</i>
<i>Conoclypeus galerus</i>	<i>Phyllacanthus</i> sp.	<i>Metalia scutiformis</i>
<b>Shum Valley and East of Damaj</b>	<i>Salenia blanfordi</i>	<i>Micropsis venustula</i>
<i>Meoma (Schizobrissus) sp.</i>	<b>Maki Hill scarp, near Tatta</b>	<i>Moira primaeva</i>
<b>Sumbak Hill</b>	<i>Porocidaris</i> spines	<i>Porocidaris anomala</i>
<i>Echinocymus nummuliticus</i>	<b>East of Band Vero, NW of Kotri</b>	<i>Prionocidaris canaliculata</i>
<b>Sumbak Hill and SW of Vero plain</b>	<i>Echinocymus nummuliticus</i> var. <i>oviformis</i>	<i>Rhynchopygus pygmaeus</i>
<i>Metalia (?) scutiformis</i> var. <i>rotunda</i>	<i>Metalia depressa</i>	<b>Near Petiani</b>
<b>Teyon</b>	<b>West of Bhagothoro Hill &amp; South of Sehwah</b>	<i>Echinocymus nummuliticus</i>
<i>Eupatagus (Eupatagus) avellana</i>	<i>Echinolampas sindensis</i> var. <i>hemisphaerica</i>	<b>East of Petiani</b>
<b>South Trak Hill</b>	<b>Gagar Nala near Darwat, on the Baran</b>	<i>Rhynchopygus pygmaeus</i>
<i>Echinocymus polymorpha</i>	<i>Opechinus rousseau</i>	<b>Pujana Lak</b>
<b>Hills SE of Trak Hill</b>	<b>Dharan Pass, near Laki</b>	<i>Schizaster (Paraster) baluchistanensis</i>
<i>Amblypygus patellaformis</i>	<i>Amblypygus subrotundus</i>	<b>Rohiri, Upper Sind</b>
<i>Amblypygus subrotundus</i>	<i>Amblypygus subrotundus</i> var. <i>conicus</i>	<i>Amblypygus latus</i>
<i>Amblypygus subrotundus</i> var. <i>conicus</i>	<i>Conoclypeus galerus</i>	<i>Echinolampas sindensis</i> var. <i>hemisphaerica</i>
<i>Hemaster (Hemaster) nobilis</i>	<i>Cyphosoma undatum</i>	<b>Rois Hill, near Damaj and South Bula Khan</b>
<b>Uncertain (Near Jakhmari Laki Range)</b>	<i>Eupatagus (Eupatagus) avellana</i>	<i>Conoclypeus rostratus</i>
<i>Porocidaris anomala</i>	<i>Eupatagus (Eupatagus) cordiformis</i>	<i>Echinoid</i> gen. sp. indet.
<b>Hills East of Lyryan, SW of Jhirak</b>	<i>Macropneustes (Macropneustes) speciosus</i>	<i>Linthia orientalis</i>
<i>Eurhodia morrisi</i>	<i>Meoma (Schizobrissus) sp.</i>	<b>Rohiri on Indus</b>
<b>NE of Petiani</b>	<i>Prionocidaris canaliculata</i>	<i>Echinolampas sindensis</i> var. <i>hemisphaerica</i>
<i>Aeolopneustes de - lorioli</i>	<b>Hills near Jakhmari Peak, Laki Range</b>	<b>Surban Range, South of Eri and NE of Bula Khan</b>
<i>Arachniopleurus reticulatus</i>	<i>Cyphosoma macrostoma</i>	<b>Khan Thana</b>
<i>Brissopsis sowerbyi</i>	<i>Macropneustes (Macropneustes) speciosus</i>	<i>Conoclypeus alveolatus</i>
<i>Cassidulus ellipticus</i>	<b>SW of Jangri and East of Surjana Range</b>	<b>Teyon, East of Chorla</b>
<i>Conoclypeus sindensis</i>	<i>Eupatagus (Eupatagus) avellana</i>	<i>Eupatagus (Eupatagus) avellana</i>
<i>Cyphosoma abnormalis</i>	<i>Metalia scutiformis</i>	<i>Macropneustes (Macropneustes) rotundus</i>
<i>Cyphosoma</i> sp.	<i>Schizaster symmetricus</i>	<b>At the base of Nummulitic Limestone in Vero plain, NW of Kotri</b>
<i>Dictyopleurus ziczac</i>	<b>Near Jhirak</b>	<i>Conoclypeus pulvinatus</i>
<i>Ditremaster elongatus</i>	<i>Macropneustes (Macropneustes) speciosus</i>	<i>Echinolampas discoideus</i>
<i>Euryneustes grandis</i>	<b>West of Kotri</b>	<b>Hills West of Unarpur</b>
<i>Hemaster (Hemaster) sp.</i>	<i>Amblypygus subrotundus</i>	<i>Rhynchopygus pygmaeus</i>
<i>Phyllacanthus sindensis</i>	<i>Amblypygus subrotundus</i> var. <i>conicus</i>	
<i>Plesiolampas ovalis</i>	<i>Echinocymus nummuliticus</i>	
<i>Plesiolampas placenta</i>		

## OLIGOCENE

<b>Mal Mohari, west of Jungshahi</b>	<b>Hindi Hill</b>	<b>West of Bhagothoro Hill, South of Sehwah</b>
<i>Echinolampas discoideus</i>	<i>Cidaris</i> sp.	<i>Clypeaster monticulifera</i>
<i>Echinolampas discoideus</i> var. $\beta$	<b>Hyderabad</b>	<i>Coelopleurus equis</i>
<i>Echinolampas discoideus</i> var. $\gamma$	<i>Coelopleurus pratti</i>	<i>Coelopleurus forbesi</i>
<b>Pokran, SSW of Sehwan</b>	<b>Neighbourhood of Laki</b>	<i>Coelopleurus pratti</i>
<i>Echinolampas placenta</i>	<i>Echinolampas d' archiac</i>	<i>Eupatagus (Eupatagus) rostratus</i>
<b>Near Radak, SSE of Jhangara</b>	<i>Echinolampas difficillis</i>	<i>Schizaster cf. newboldi</i>
<i>Echinolampas radakensis</i>	<b>Kudin</b>	<i>Schizaster (Paraster) baluchistanensis</i>
<b>Trak Hill</b>	<i>Breynia multituberculata</i>	<i>Schizaster (Schizaster) granti</i>
<i>Cidaris</i> sp.	<b>Trak Hill, South of Bula Khan</b>	<b>In the limestone at the base of Nari Group</b>
<b>SE of Trak Hill</b>	<i>Echinolampas discoideus</i>	<i>Cidaris verneuli</i>
<i>Echinolampas tumida</i> var.	<i>Echinolampas discoideus</i> var. <i>tumida</i>	<i>Clypeaster profundus</i>
<b>Baran River section, below Tong</b>	<b>North end of Watwaro</b>	<i>Coelopleurus forbesi</i>
<i>Clypeaster simplex</i>	<i>Echinolampas discoideus</i> var.	<i>Eupatagus (Eupatagus) rostratus</i>
		<i>Schizaster (Paraster) baluchistanensis</i>

**MIocene**

<b>Amra Hill</b>	<b>North of Babba Band</b>	<b>SW of Beynir Hill</b>
<i>Brissus</i> sp.	<i>Echinolampas sphaeroidalis</i> (?)	<i>Cidaris opipara</i>
<i>Clypeaster profundus</i>	<i>Echinus subcrenatus</i>	<i>Cidaris spines</i>
<b>West of Beynir Hill</b>	<b>Barri Nai</b>	<i>Clypeaster profundus</i>
<i>Clypeaster complanatus</i>	<i>Brissus</i> sp.	<i>Echinodiscus desori</i>
<b>SE of Beynir Hill and SE of Tong</b>	<i>Clypeaster profundus</i>	<i>Echinodiscus</i> sp.
<i>Echinodiscus</i> sp.	<b>Gaj River</b>	<i>Echinolampas jacquemonti</i>
<b>Hill near Gialbi</b>	<i>Schizaster (Schizaster) granti</i>	<i>Echinolampas sphaeroidalis</i> (?)
<i>Clypeaster complanatus</i>	<b>Ravine, SE of Bill</b>	<b>Hala Range</b>
<b>Near Habb River</b>	<i>Clypeaster profundus</i>	<i>Cidaris halaensis</i>
<i>Hipponoe antiqua</i>	<i>Clypeaster pulvinatus</i>	<i>Coelopleurus forbesi</i>
<b>SW of Jangara</b>	<i>Echinolampas jacquemonti</i>	<i>Cyphosoma nummuliticum</i>
<i>Coelopleurus forbesi</i>	<i>Hipponoe proavia</i>	<i>Echinanthus profundus</i>
<b>South of Jangri</b>	<b>Gandak Hill</b>	<i>Echinolampas jacquemonti</i>
<i>Clypeaster profundus</i>	<i>Clypeaster complanatus</i>	<i>Echinolampas vicaryi</i>
<b>Scarp at Mol Plateau, West of Kund</b>	<i>Coelopleurus forbesi</i>	<i>Opechinus costatus</i>
<i>Clypeaster complanatus</i>	<b>Kadyi Gorge</b>	<i>Opechinus rousseauui</i>
<i>Clypeaster profundus</i>	<i>Echinolampas jacquemonti</i>	<b>Hills on road Jangri to Bula Khan Thana</b>
<i>Echinodiscus ellipticus</i>	<i>Schizaster (Schizaster) granti</i>	<i>Cidaris excelsa</i>
<i>Echinolampas jacquemonti</i>	<b>NW of Karachi Town</b>	<i>Clypeaster profundus</i>
<i>Echinus subcrenatus</i>	<i>Clypeaster profundus</i>	<i>Moira (Moiopsis) sp.</i> (?)
<i>Hipponoe antiqua</i>	<b>ENE of Karachi Town</b>	<i>Opechinus affinis</i>
<b>Naig – Nai – Valley</b>	<i>Clypeaster profundus</i>	<i>Opechinus rousseauui</i>
<i>Breynia carinata</i>	<b>Hills SE of Kot Baruch</b>	<i>Prionocidaris excelsa</i>
<i>Brissus</i> sp.	<i>Breynia carinata</i>	<b>Mazarani – Nai Hills, West of Larkhana</b>
<i>Cidaris opipara</i>	<b>Scarp at Kupo – jo – lak</b>	<i>Breynia carinata</i>
<i>Clypeaster profundus</i>	<i>Cidaris opipara</i>	<i>Echinolampas jacquemonti</i>
<i>Coelopleurus sindensis</i>	<i>Clypeaster complanatus</i>	<i>Lepidopleurus granulatus</i>
<i>Echinodiscus elongatus</i>	<i>Clypeaster profundus</i>	<i>Temnechinus stellulatus</i>
<i>Echinodiscus placenta</i>	<i>Echinolampas jacquemonti</i>	<b>Mendiari, North of Karachi</b>
<i>Echinolampas jacquemonti</i>	<i>Echinolampas sphaeroidalis</i> (?)	<i>Coelopleurus forbesi</i>
<i>Lepidopleurus hemisphaericus</i>	<i>Schizaster (Schizaster) granti</i>	<i>Hipponoe proavia</i>
<i>Schizaster (Paraster) sufflatus</i>	<b>Pir Gaji, West of Sehwan</b>	<b>Meyhir Scarp</b>
<i>Schizaster (Schizaster) granti</i>	<i>Breynia carinata</i>	<i>Clypeaster profundus</i>
<i>Temnechinus gajensis</i>	<i>Brissus</i> sp.	<i>Echinolampas jacquemonti</i>
<b>Nari – Mai</b>	<i>Clypeaster profundus</i>	<b>Mol Plateau, West of Thana Shah beg</b>
<i>Breynia carinata</i>	<i>Coelopleurus forbesi</i>	(?) <i>Meoma (Schizobrissus) sp.</i>
<b>Sarochi</b>	<i>Echinolampas jacquemonti</i>	<b>Mol Plateau, North of Shah beg</b>
<i>Cidaris spine</i>	<i>Schizaster (Schizaster) granti</i>	<i>Hipponoe antiqua</i>
<b>North of Shah-beg</b>	<b>South of Pir mangal</b>	<b>Tandra Rahim Khan</b>
<i>Clypeaster profundus</i>	<i>Cidaris opipara</i>	<i>Clypeaster profundus</i>
<i>Echinolampas jacquemonti</i>	<i>Clypeaster pelviformis</i>	<i>Coelopleurus forbesi</i>
<b>SE of Shah-beg</b>	<i>Clypeaster profundus</i>	<i>Coelopleurus sindensis</i>
<i>Clypeaster profundus</i>	<b>East of Thana Shah-beg</b>	<b>SE of Tong</b>
<b>Sita – Nai</b>	<i>Clypeaster profundus</i>	<i>Clypeaster depressus</i>
<i>Cidaris opipara</i>	<i>Echinodiscus desori var.</i>	<i>Clypeaster profundus</i>
<i>Echinolampas jacquemonti</i>	<i>Echinolampas jacquemonti</i>	<i>Echinolampas jacquemonti</i>
<b>Sunbak Pass (East side)</b>	<i>Echinolampas sphaeroidalis</i> (?)	<i>Hipponoe antiqua</i>
<i>Prionocidaris excelsa</i>	<b>Hill scarp North of Shah Rhui</b>	<i>Schizaster (Schizaster) granti</i>
<b>Locality undescribed</b>	<i>Coelopleurus forbesi</i>	<b>Trak Hills (West Side)</b>
<i>Coelopleurus forbesi</i> (pre mature form)	<i>Echinolampas jacquemonti</i>	<i>Cidaris</i> sp
<i>Echinolampas sphaeroidalis</i>	<i>Hipponoe antiqua</i>	<i>Clypeaster profundus</i>
	<b>Mol Range</b>	
	<i>Schizaster (Schizaster) granti</i>	

**ALPHABETICAL LIST OF GENERA AND SPECIES**

- abnormale Cyphosoma* Duncan and Sladen, Eocene Sind (Duncan and Sladen, 1882 – 86: 32, pl. 7, figs. 1 – 7; GSI TYPE Nos. **2500 – 2501**).
- Acrosalenia* L. Agassiz. Jurassic Rajasthan (Srivastava *et al.*, 2010: 59 – 64)
- Acanthechinus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 86: 34).
- acuminatus* (?) *Spatangus* Sowerby. Eocene Kachchh (Grant, 1837: 327 pl. 24, fig. 23).
- Aeolopneustes* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 86: 48).
- aequivoca* *Echinolampas* Duncan. Eocene Sind (Duncan and Sladen, 1882 – 86: 173, pl. 32, figs. 1 – 3; GSI TYPE No. **2642**).
- affinis* (?) *Clypeaster* Goldfuss. Eocene Kachchh (Grant, 1837: 327 pl. 24, figs. 20 – 20a). *affinis* *Euspatangus* Duncan and Sladen. See *affinis* *Eupatagus* (*Eupatagus*) (Duncan and Sladen).
- affinis* *Eupatagus* (*Eupatagus*) (Duncan and Sladen). Eocene Kachchh (Duncan and Sladen, 1883: 46, pl. 12, fig. 2; GSI TYPE No. **2867** (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 145 - 146, pl. 6, figs. 5 - 6).
- affinis* *Goniocidaris* Duncan and Sladen. Miocene Kachchh (Duncan and Sladen, 1883: 52, pl. 8, fig. 9; GSI TYPE No. **2848**).
- aff. *affinis* *Goniocidaris* Duncan. Pliocene Makran (Pilgrim, 1908: 41).
- affinis* *Opechinus* (Duncan and Sladen). Miocene Sind (Duncan and Sladen, 1882 – 86: 303; GSI TYPE No. **2902**); Kathiawar (Duncan and Sladen, 1883: 86, pl. 13, figs. 11, 12; GSI TYPE No. **2882**); (Jain, 2002: 114, Pl. 2, figs. 7 - 11; GSI TYPE Nos. **20733 – 35**).
- affinis* *Temnechinus* Duncan and Sladen. See *affinis* *Opechinus* (Duncan and Sladen).
- agariformis* *Metalia* Duncan and Sladen. Eocene Sind (Duncan and Sladen,

- 1882 - 86: 213, pl. 36, figs. 11 - 14; GSI TYPE No. 2673).
- alta* *Echinolampas* Duncan and Sladen. Eocene Kachchh (Duncan and Sladen, 1883: 19, pl. 1, figs. 1 - 6; GSI TYPE Nos. 2815, 2816; Roy and Das Gupta, 1970; Srivastava and Singh, 1999: 26, Pl. 1, figs. 1 - 6).
- alta* var. *Echinolampas* Duncan and Sladen. Eocene Kachchh (Duncan and Sladen, 1883: 22, pl. 1, fig. 7; GSI TYPE No. 2817).
- altus* *Amblypygus* Duncan and Sladen. Eocene Kachchh (Duncan and Sladen, 1883: 16, pl. 4, figs. 1 - 3; GSI TYPE Nos. 2825 - 2827; Srivastava and Singh, 2001: 26 - 27, Pl. 1, figs. 1 - 6).
- alveolatus* *Conoclypeus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 86: 124, pl. 23, figs. 1 - 6; GSI TYPE No. 2596).
- alveolatus* *Schizaster* Duncan and Sladen. See *alveolatus Schizaster* (*Schizaster*) (Duncan and Sladen).
- alveolatus* *Schizaster* (*Schizaster*) (Duncan and Sladen). Eocene Sind (Duncan and Sladen, 1882 - 86: 87, pl. 20, figs. 10 - 14; GSI TYPE No. 2585 (Lectotype, SD Srivastava, 2004) - 2586; Srivastava, 2004: 144, pl. 5, figs. 12 - 14).
- Amblypygus* Agassiz. Eocene Sind (Duncan and Sladen, 1882 - 86: 140); Kachchh (Duncan and Sladen, 1883: 16; Srivastava and Singh, 2001: 26; Srivastava, 2009: 46-56).
- ameliae* *Hemiaster* Cotteau, Peron & Gauthier. Cretaceous Karakoram (Steffani, 1928: 180).
- angustifolia* *Echinolampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 86: 164, pl. 30, figs. 1 - 11; GSI TYPE No. 2634 - 2636).
- cf. *angutier* *Echinobrissus* Gauthier. Cretaceous Narbada (Chiplonkar, 1937: 63).
- anomala* *Porocidaris* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 86: 113, pl. 21, figs. 10 & 14; GSI TYPE No. 2590).
- antecursor* *Eolampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 86: 62, pl. 17, figs. 11 - 15; GSI TYPE No. 2567 - 2568).
- antiqua* *Hipponoe* Duncan and Sladen. Miocene Sind (Duncan and Sladen, 1882 - 86: 313, pl. 49, figs. 2 - 4; GSI TYPE No. 2759 - 2760).
- antiqua* *Moira* Duncan and Sladen. See *antiqua Moira* (*Moiopsis*) (Duncan and Sladen).
- antiqua* *Moira* (*Moiopsis*) (Duncan and Sladen). Miocene Kachchh (Duncan and Sladen, 1883: 64, pl. 8, figs. 1 - 6; GSI TYPE Nos. 2842 (Lectotype, SD Srivastava, 2004) - 2846; Srivastava, 2004: 143 - 144, pl. 5, figs. 5 - 7); Kathiawar (Jain, 2002: 127, pl. 6, figs. 1 - 3; GSI TYPE Nos. 20782 - 20783).
- apertus* *Clypeaster* Duncan and Sladen. Eocene Kachchh (Duncan and Sladen, 1883: 11, pl. 6, fig. 7).
- apicalis* *Briissopsis* (Duncan and Sladen). Eocene Sind (Duncan and Sladen, 1882 - 86: 193, pl. 34, figs. 1 - 7; GSI TYPE No. 2655 (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 145, pl. 6, figs. 13 - 15); Kohat (Davies, 1943: 69).
- apicalis* *Hemiaster* Duncan and Sladen. See *apicalis Briissopsis* (Duncan and Sladen).
- Archeocidaris* M'Coy. Permian Karakoram (Merla, 1934: 257); Salt Range (Waagen, 1885: 819); Permo - Carboniferous Karakoram (Terra, de, 1932: 158).
- Archeocidaris* sp. Permian Karakoram (Merla, 1934: 257); Salt Range (Waagen, 1885: 819).
- Arachniopleurus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 42); Kachchh (Duncan and Sladen, 1883: 11); Baluchistan (Vredenburg, 1901: 264).
- arcotensis* *Salelnia* Stoliczka. Cretaceous South India (Stoliczka, 1873: 109 Pl. 16, fig. 6; GSI Type No. 1682).
- ariyalurensis* *Gongrochanus* Srivastava. Cretaceous South India (Srivastava, 2003 (a): 59 - 64, Pl. 1, figs. 1 - 8).
- ariyalurensis* *Limpasiaster* Aziz and Badve. Cretaceous South India (Aziz and Badve, 2001: 50, Pl. 2, figs. 4 - 6; Holotype No. MACS - G - 2002).
- ariyalurensis* *Progongrochanus* Aziz and Badve. Cretaceous South India (Aziz and Badve, 2001: 45, Pl. 1, figs. 1 - 3; Holotype No. MACS - G - 2002).
- G - 1951).
- astrobola* *Cyrtoma* McClelland. See *herschelianus Gongrochanus* (McClelland).
- ataxensis* var. *globosa* *Pyrina* Cotteau. Cretaceous Baluchistan (Noetling, 1897: 19, Pl. 4, figs. 4 - 4b, 4A, 5a - b; GSI TYPE Nos. 2979 - 2980).
- ataxensis* var. *pentagonalis* *Pyrina* (Cotteau). Cretaceous Assam (Das Gupta, 1920: 297; Das Gupta, 1929: 26, Pl. 1, figs. 10a - b); Baluchistan (Noetling, 1897: 19, Pl. 3, figs. 4 - 4c, Pl. 4, figs. 1 - 1a, 4 - 4a, 5 - 5b; GSI TYPE Nos. 2975 - 2976).
- ataxensis* var. *tumida* *Pyrina* (Cotteau). Cretaceous Assam (Das Gupta, 1920: 297; Das Gupta, 1929: 26, Pl. 1, figs. 10a - b); Baluchistan (Noetling, 1897: 19, Pl. 4, figs. 2 - 2b, 3 - 3a; GSI TYPE Nos. 2977 - 2978).
- auritus* var. *Echinodiscus* Leske. Pliocene Makran (Duncan and Sladen, 1882 - 1886: 381; Pilgrim, 1908: 41).
- avellana* (?) *Eupatagus* Archiac and Haime. See *avellana* (?) *Eupatagus* (*Eupatagus*) (Archiac and Haime).
- avellana* *Eupatagus* (*Eupatagus*) (Archiac and Haime). Eocene Sind (Duncan and Sladen, 1882 - 1886: 235, Pl. 38, figs. 13; GSI Type No. 2686 (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 146, pl. 6, figs. 9 - 12).
- avellana* (?) *Eupatagus* (*Eupatagus*) (Archiac and Haime). Eocene Sind (Archiac and Haime, 1853: 218, Pl. 15, figs. 8a - b).
- avellana* *Euspatangus* Archiac and Haime. See *avellana* *Eupatagus* (*Eupatagus*) (Archiac and Haime).
- baluchistanensis* *Holectypus* Noetling. Cretaceous Baluchistan (Noetling, 1894: 126 nn; Noetling, 1897: 18, Pl. 3, figs. 3 - 3b; GSI TYPE No. 2974).
- baluchistanensis* *Schizaster* Archiac and Haime. See *baluchistanensis* *Schizaster* (*Paraster*) (Archiac and Haime).
- baluchistanensis* *Schizaster* (*Paraster*) (Archiac and Haime). Eocene Sind (Archiac and Haime, 1853: 221, Pl. 15, figs. 9a-b; Duncan and Sladen, 1882 - 1886: 224; GSI Type No. 2899); Baluchistan (Ball, 1874: 152); Oligocene Sind (Blanford, 1876: 14; Blanford, 1879: 52).
- baluchistanensis* var. *Schizaster* Archiac d'. See *baluchistanensis* var. *Schizaster* (*Paraster*) (Archiac and Haime).
- baluchistanensis* var. *Schizaster* (*Paraster*) (Archiac and Haime). Eocene Kachchh (Duncan and Sladen, 1883: 38, Pl. 5, figs. 5 - 8; GSI Type Nos. 2831, 2832 (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 144, pl. 4, figs. 6 - 8).
- bellus* *Progongrochanus* Aziz and Badve. Cretaceous South India (Aziz and Badve, 2001: 46, Pl. 1, figs. 4 - 5; Holotype No. MACS - G - 1970).
- aff. *baylei* *Schizaster* Cott. Pliocene Makran (Pilgrim, 1908: 42).
- cf. *bicordata* *Collyrites* Leske. Jurassic Kachchh (Gregory, 1893: 9).
- biplicata* *Hemiaster* Sowerby. Cretaceous South India (Kossmat, 1897: 95, Pl. 10, figs. 3a - c).
- blanfordi* *Hemiaster* Noetling. Cretaceous Baluchistan (Noetling, 1894: 126 nn; Noetling, 1897: 35, Pl. 8, figs. 3 - 3a, 4 - 4d, 5, 5a, 6, 7; GSI Type Nos. 2999 - 3002 and 3101).
- blanfordi* *Salenia* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 29, Pl. 6, figs. 1 - 8; GSI Type Nos. 2497 - 2499).
- bosei* *Polydiadema* Chiplonkar and Badve. Cretaceous Narbada (Chiplonkar and Badve, 1972: 139 - 140, Pl. 11, figs. 8 - 10).
- Botriopygus* Orbigny d'. Cretaceous South India (Stoliczka, 1873: 96).
- Botriopygus* sp. Cretaceous South India (Stoliczka, 1873: 96, Pl. 14, fig. 6; GSI Type No. 1663).
- Breynia* Desor. Eocene Sind (Archiac and Haime, 1853: 216; Duncan and Sladen, 1882 - 1886: 299); Oligocene Sind and Baluchistan (Vredenburg, 1906b: 271) Miocene Sind (Duncan and Sladen, 1882 - 1886: 343); Baluchistan (Griesbach, 1902: 32); Kachchh (Duncan and Sladen, 1883: 66); Kathiawar (Jain, 2002: 132); South India (Sahni and Sastry, 1958: 221).
- Briissopatagus* Cotteau. Eocene Sind (Duncan and Sladen, 1882 - 1886: 226).
- Briissopsis* Agassiz. Eocene Sind (Archiac and Haime, 1853: 219; Duncan

- and Sladen, 1882 -1886: 193, 203, 206; Srivastava, 2004: 145); Kohat (Davies, 1943: 72); Baluchistan (Ball, 1874: 152); Miocene Kathiawar (Duncan and Sladen, 1883: 89; Srivastava, 2003 (b): 99; Jain, 2002: 128).
- Brissopsis* (?) sp. Miocene Kathiawar (Duncan and Sladen, 1883: 89).
- Brissus* Klein. Cretaceous South India (Forbes, 1845: 160); Miocene Sind (Duncan and Sladen, 1882 -1886: 354); Kathiawar (Jain, 2002: 127); Pliocene Makran (Pilgrim, 1908: 42).
- Brissus* sp. Miocene Sind (Duncan and Sladen, 1882 - 1886: 354, Pl. 55, fig. 9; GSI Type No. **2800**).
- calderi Eurhodia* Archiac and Haime. Eocene Sind (Archiac and Haime, 1833: 352, Pl. 36, fig. 19).
- calderi Rhynchopygus* Archiac and Haime. Eocene Sind (Duncan and Sladen, 1882 - 1886: 67, 154, Pl. 15, figs. 1 - 4; GSI Type Nos. **2555** and **184**, Pl. 33, figs. 1- 6; GSI Type Nos. **2647** - **2649**).
- canaliculata Cidaris* (*Leiocidaris*) Duncan and Sladen. See *canaliculata Prionocidaris* (Duncan and Sladen).
- canaliculata Prionocidaris* (Duncan and Sladen). Eocene Sind (Duncan and Sladen, 1882 - 1886: 109, Pl. 21, figs. 1 - 9; GSI Type Nos. **2587** - **2589**); Kohat (Davies, 1943: 66, Pl. 11, fig. 1).
- Cardiaster* Forbes. Cretaceous South India (Stoliczka, 1873: 92).
- Cardiopygus* Aziz and Badve. Cretaceous South India (Aziz and Badve, 2001: 49).
- cardus Cardiopygus* Aziz and Badve. Cretaceous South India (Aziz and Badve, 2001: 49, Pl. 2, figs. 1 - 3; Holotype No. MACS - G - **2001**).
- carinata Breynia* Archiac and Haime. Eocene Sind (Archiac and Haime, 1853: 216, Pl. 15, figs. 4a - c; Duncan and Sladen, 1882 - 1886: 229; GSI Type No. **2901**); Miocene Sind (Duncan and Sladen, 1882 - 1886: 343, Pl. 54, figs. 1-9, Pl. 55, figs. 1-8; GSI Type Nos. **2790** - **2799**); Baluchistan (Griesbach, 1902: 32); *Kachchh* (Duncan and Sladen, 1883: 66, Pl. 10, figs. 1 - 4; GSI Type Nos. **2858**, **2859**); Kathiawar (Jain, 2002: 132, Pl. 6, fig. 15); South India (Sahni and Sastry, 1958: 221, Pl. 41, fig. 8; GSI Type No. **17678**).
- carinatus Hemiaster* Duncan and Sladen. Eocene Sind. See *carinatus Hemiaster* (*Hemiaster*) (Duncan and Sladen).
- carinatus Hemiaster* Duncan and Sladen. Eocene Kachchh. See *carinatus Opissaster* (Duncan and Sladen).
- carinatus Hemiaster* (*Hemiaster*) (Duncan and Sladen). Eocene Sind (Duncan and Sladen, 1882 - 1886: 198, Pl. 34, figs. 12 - 14; GSI Type No. **2657** (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 131 - 133, pl. 4, fig. 5).
- carinatus Opissaster* (Duncan and Sladen). Eocene Kachchh (Duncan and Sladen, 1883: 35, Pl. 11, figs. 1 - 4, GSI Type No. **2863** (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 143, pl. 4, fig. 2).
- carteri Clypeaster* Duncan and Sladen. Oligocene Kachchh (Duncan and Sladen, 1883: 49, Pl. 12, fig. 12; GSI Type No. **2874**); Miocene Kathiawar (Jain, 2002: 118, Pl. 3, figs. 10 - 13; GSI TYPE Nos. **20746** - **20747**).
- Cassidulus* Lamarck. Cretaceous South India (Forbes, 1845: 162; Stoliczka, 1873: 101); Eocene Sind (Duncan and Sladen, 1882 - 1886: 65).
- Catopygus* Agassiz. Cretaceous South India (Stoliczka, 1873: 96).
- cauveriae Toxaster* Aziz and Badve. Cretaceous South India (Aziz and Badve, 2001: 55, Pl. 4, figs. 4 - 6; Holotype No. MACS - G - **2128**).
- cenomanense Cyphosoma* Cotteau. Cretaceous Narbada (Duncan, 1887a: 89; GSI Type No. **4302**).
- cenomensis Hemiaster* Cotteau. See *cenomensis Hemiaster* (*Hemiaster*) Cotteau.
- cenomensis Hemiaster* (*Hemiaster*) (Cotteau). Baluchistan (Noetling, 1894: 126 nn; Noetling, 1897: 36, Pl. 8, figs. 4 - 4a, 5, 5a, 6, 7; GSI Type No. **2998**); Cretaceous Narbada (Duncan, 1887 (a): 91 GSI Type No. **4306**; Fourtau, 1918: 46, Pl. 2, fig. 2, 3; GSI Type Nos. **11948** (Lectotype, SD Srivastava, 2004), **11949**; Chiplonkar, 1937: 64; Chiplonkar and Badve, 1972: 148, Pl. 12, figs. 10 and 14; Srivastava, 2004: 133, pl. 2, figs. 12 - 15).
- chiplonkari Gongrochanus* Badve and Aziz. See *herschelianus Gongrochanus* (Mc' Clelland).
- chirakhanensis Echinobrissus* Chiplonkar. See *chirakhanensis Nucleolites* (Chiplonkar).
- chirakhanensis Hemiaster* (*Mecaster*) Chiplonkar. Cretaceous Narbada (Chiplonkar, 1937: 65, Pl. 6, fig. 2; Chiplonkar, 1939: 240, Pl. 25, fig. 4; Chiplonkar and Badve, 1972: 147 - 148, Pl. 12, figs. 3 and 7).
- chirakhanensis Nucleolites* (Chiplonkar). Cretaceous Narbada (Chiplonkar, 1939: 237, Pl. 25, fig. 3; Chiplonkar and Badve, 1972: 143, Pl. 11, figs. 2 - 3; Pl. 12, figs. 16 and 21).
- circularis Gongrochanus* Badve and Aziz. See *herschelianus Gongrochanus* (Mc' Clelland).
- Cidaris* Klein. Permian Salt Range (Konick, de., 1862: 4; Verneuil, de., 1866: 214); Jurassic Kashmir (Statesche, 1932: 152) Kachchh (Gregory, 1893: 3); Cretaceous Baluchistan (Noetling, 1894: 126; Noetling, 1897: 11; Sind (Duncan and Sladen, 1882 - 1886: 8); Assam (Spengler, 1923: 2); Narbada (Bose, 1884: 40; Duncan, 1887a: 87; Duncan, 1887b: 153; Chiplonkar and Badve, 1972: 137 - 138); South India (Stoliczka, 1873: 119); Eocene Sind (Archiac d' and Haime, 1853: 196; Duncan and Sladen, 1882 - 1886: 250); Baluchistan (Ball, 1874: 152); Oligocene Sind (Blanford, 1879: 52; Duncan and Sladen, 1882 - 1886: 250); Miocene Sind (Duncan and Sladen, 1882 - 1886: 282); Kathiawar (Duncan and Sladen, 1883: 80; Fedden, 1884: 121); Pliocene Makran (Duncan and Sladen, 1882 - 1886: 373).
- spines of *Cidaris*. Eocene and Miocene Sind (Duncan and Sladen, 1882 - 1886, Pl. 10, figs. 1 - 14, 11, figs. 1 - 11, Pl. 45, figs. 1 - 28; GSI Type Nos. **2512** - **2525** and **2716** - **2743**); Pliocene Makran (Duncan and Sladen, 1882 - 1886, Pl. 57, figs. 1 - 14; GSI Type Nos. **2805** - **2812**).
- Cidaris* sp. Jurassic Kashmir (Statesche, 1932: 152); Cretaceous Assam (Spengler, 1923: 2); South India (Stoliczka, 1873: 121, Pl. 17, fig. 37; GSI Type No. **1721**); Eocene Sind (Archiac and Haime, 1853: 197, Pl. 13, figs. 3a-f; Duncan and Sladen, 1882 - 1886: 125, Pl. 5, figs. 1-3; GSI Type No. **2492**); Oligocene Sind (Duncan and Sladen, 1882 - 1886: 250, Pl. 39, figs. 1-2; GSI Type Nos. **2690** - **2691**); Miocene Sind (Duncan and Sladen, 1882 - 1886: 238, pl. 44); Pliocene Makran (Duncan and Sladen, 1882 - 1886: 373, Pl. 54, figs. 1 - 3; GSI Type Nos. **2801** - **2802**).
- (?) *Cidaris* sp. Jurassic Kachchh (Gregory, 1893: 3; GSI Type No. **6734a**).
- Cidaris* ((?)*Goniocidaris*). Pliocene Makran (Duncan and Sladen, 1882 - 1886: 372).
- Cidaris* ((?)*Goniocidaris*) sp. Pliocene Makran (Duncan and Sladen, 1882 - 1886: 372, Pl. 56, figs. 1 - 2).
- Cidaris* (*Leiocidaris*). Desor. See *Prionocidaris* Agassiz.
- circularis* *Cypeaster* Spengler. Eocene Assam (Spengler, 1923: 69, Pl. 4, figs. 10a-b).
- Clypeaster* Lamarck. Eocene Kachchh (Grant, 1837: 327); Sind (Duncan and Sladen, 1882 - 1886: 319); Assam (Spengler, 1923: 69); Oligocene Sind (Blanford, 1879: 52; Duncan and Sladen, 1882 - 1886: 257); Kachchh (Duncan and Sladen, 1883: 49); Miocene Sind (Duncan and Sladen 1882 - 1886: 319; Das Gupta, 1910: 19); Kachchh (Duncan and Sladen, 1883: 58). Kathiawar (Fedden, 1884: 119; Jain, 2002: 118); Pliocene Makran (Blanford, W. T., 1872: 45; Duncan and Sladen, 1882 - 1886: 376; Pilgrim, 1908: 41).
- Clypeaster* sp. Oligocene Sind (Duncan and Sladen, 1882 - 1886: 257, Pl. 39, figs. 13, 14; GSI Type No. **2698**).
- Clypeolampas* Cotteau. Cretaceous Baluchistan (Noetling, 1894: 126; Noetling, 1897: 24).
- Coelopleurus* Agassiz. Eocene Sind (Archiac and Haime, 1853: 198); Kachchh (Wynne, 1872: 246); Oligocene Sind (Blanford, 1876: 14; Blanford, 1879: 52; Duncan and Sladen, 1882 - 1886: 251); Miocene Sind (Duncan and Sladen, 1882 - 1886: 287) Kachchh (Duncan and Sladen, 1883: 53); Kathiawar (Jain, 2002: 112).
- Coelopleurus* (*Keraiphorus*) sp. Srivastava et al. Lower to Middle Miocene Mizoram (Srivastava et al., 2008(b): 221, Pl. I, figs. a-c; eight specimens (Type Nos. MZ/E/1, 2, 3, 4, 5, 6, 7 and 8))
- Collyrites* Desmoulins, 1835. Jurassic Kachchh (Gregory, 1893: 8).
- complanatus* *Clypeaster* Duncan and Sladen. Miocene Sind (Duncan and

- Sladen, 1882 - 1886: 325, Pl. 50, figs. 10, 11; GSI Type No. **2767**; Das Gupta, 1910:19); Kathiawar (Jain, 2002: 118 - 119, Pl. 3, figs. 14 - 15; GSI TYPE Nos. **20748 - 20749**).
- compresa* *Toxaster* Aziz and Badve. Cretaceous South India (Aziz and Badve, 2001: 55, Pl. 4, figs. 7 - 9; Holotype No. MACS - G - **2132**).
- compressus* *Hemipneustes* Noetling. Cretaceous Baluchistan (Noetling, 1894: 126 nn; Noetling, 1897: 34, Pl. 7, figs. 3 - 3c, 4; Pl. 8, figs. 1 - 1a, 2 - 2b; GSI TYPE Nos. **2994 - 2997**).
- cf. *conicus* *Echinocyamus* Breynius. Cretaceous South India (Stoliczka, 1873(b): 106, Pl. 16, fig. 3; GSI Type No. **1679**).
- Conocybeus* Agassiz. Cretaceous Assam (Medlicott, 1869: 182); Eocene Salt Range (d' Archiac and Haime, 1853: 215; Wynne, 1879: 295); Kohat (Davies, 1926: 359; Davies, 1943: 67); Sind (Blanford, 1876: 13; Blanford, 1879: 48; Duncan and Sladen, 1882 - 1886: 52); Baluchistan (Ball, 1874: 152).
- Conocybeus* sp. Eocene Salt Range (Davies, 1943: 67).
- Conocybeus* (?) sp. Eocene Sind (Duncan and Sladen, 1882 - 1886: 52, Pl. 12, figs. 5, 6; GSI Type No. **2538**).
- Conulus* Leske. Cretaceous Kohat (Currie, 1930: 19).
- Conulus* sp. Cretaceous Kohat (Currie, 1930: 19, Pl. 4a, fig. 12; GSI Type No. **14423**).
- cookei* *Echinolampas* Srivastava and Singh. Oligocene Kachchh (Srivastava and Singh, 1999: 30 - 31, Pl. 5, figs. 5 - 8).
- cormandeli* *Proisaster* Aziz and Badve. Cretaceous South India (Aziz and Badve, 2001: 157, Pl. 5, figs. 4 - 6; Holotype No. MACS - G - **2142**).
- cordiformis* *Eupatagus* (*Eupatagus*) (Duncan and Sladen). Eocene Sind (Duncan and Sladen, 1882 - 1886: 238, Pl. 38, fig. 14; GSI Type No. **2687** (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 146, Pl. 7, figs. 9 - 11).
- cordiformis* *Euspatangus* Duncan and Sladen. See *cordiformis* *Eupatagus* (*Eupatagus*) (Duncan and Sladen).
- coronalis* *Coelopleurus*. Eocene Sind (d' Archiac and Haime, 1853: 198).
- costatus* *Opechinus* (Archiac and Haime). Miocene Sind (Archiac and Haime, 1853: 204, Pl. 13, figs. 9a, b); Kathiawar (Duncan and Sladen, 1883: 84, Pl. 13, figs. 9, 10; GSI Type No. **2881**); (Jain, 2002: 115, Pl. 2, figs. 12 - 15; GSI TYPE Nos. **20736 - 39**).
- costatus* *Temnechinus* Archiac. See *costatus* *Opechinus* (Archiac and Haime).
- costatus* *Tenmopleurus* Archiac and Haime. See *costatus* *Opechinus* (Archiac and Haime).
- crassus* *Cassidulus* Stoliczka. See *crassus* *Progongrochanus* (Stoliczka).
- crassus* *Progongrochanus* (Stoliczka). Cretaceous South India (Stoliczka, 1873: 102, Pl. 15, figs. 13; GSI Type No. **1675, 1676**; Aziz and Badve, 2001: 46).
- cristatus* *Hemiaster* Stoliczka. See *cristatus* *Hemiaster* (*Mecaster*) (Stoliczka).
- cristatus* *Hemiaster* (*Mecaster*) (Stoliczka). Cretaceous South India (Stoliczka, 1873(b): 87, Pl. 13, figs. 2 - 5; GSI Type Nos. **1649** (Lectotype, SD Srivastava, 2004) - **1652**; Srivastava, 2004: 139, pl. 2, figs. 7 - 8).
- cutchensis* *Pseudodiadema* Gregory. Jurassic Kachchh (Gregory, 1893: 5, Pl. 2, figs. 1, 2; GSI Type Nos. **6740, 6741**).
- Cyphosoma* Agassiz. Cretaceous Narbada (Duncan 1887a: 89; Fourtau, 1918: 41); Baluchistan (Vredenburg, 1908: 175); Eocene Sind (Duncan and Sladen, 1882 - 1886: 32; Noetling, 1897: 33); Miocene Sind (Archiac and Haime, 1853: 197).
- Cyphosoma* sp. Cretaceous Baluchistan (Noetling, 1897: 13); Eocene Sind (Duncan and Sladen, 1882 - 1886: 33, Pl. 7, figs. 8, 9; GSI Type No. **2502**).
- Cyrtoma* Mc' Clelland. See *Gongrochanus* Kier, 1962.
- dainelli* *Linthia* Steffani. Cretaceous Karakoram (Steffani, 1928: 187, Pl. 21, figs. 6a - c and 7).
- damesi* *Echinolampas* Duncan and Sladen. Eocene Kachchh (Duncan and Sladen, 1883: 27, Pl. 2, figs. 9, 10, Pl. 3, fig. 1; GSI Type No. **2822**) Oligocene Kachchh (Srivastava and Singh, 1999: 31, Pl. 3, figs. 4 - 6; Pl. 4, figs. 1 - 4).
- d' archiac* *Dictyopleurus* Duncan and Sladen Eocene Sind (Duncan and Sladen, 1882 - 1886: 41, Pl. 10, figs. 5 - 8; GSI Type Nos. **2510, 2511**).
- d' archiac* *Echinolampas* Duncan and Sladen. Oligocene Sind (Duncan and Sladen, 1882 - 1886, 259, Pl. 40, figs. 8, 9; GSI Type No. **2702**).
- daviesi* *Brissus* Jain. Miocene Kathiawar (Jain, 2002: 127, Pl. 6, figs. 4 - 9; GSI TYPE Nos. **20784 - 20787**).
- decipiens* *Hemiaster* Duncan and Sladen. See *decipiens* *Hemiaster* (*Hemiaster*) (Duncan and Sladen).
- decipiens* *Hemiaster* (*Hemiaster*) (Duncan and Sladen). Eocene Kachchh (Duncan and Sladen, 1883: 34, Pl. 6, figs. 3 - 5; GSI Type No. **2834** (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 133 - 135, pl. 2, figs. 10 - 11).
- declivis* *Conocybeus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 53, Pl. 12, fig. 7; GSI Type No. **2539**).
- aff. *decorata* *Discioidea* Desor. Cretaceous Kohat (Currie, 1930: 17, Pl. 4a, figs. 7-11; GSI Type Nos. **14413 - 144422**).
- de-filippi* *Pseudocidaris* Steffani. Cretaceous Karakoram (Steffani, 1928: 161, Pl. 19, figs. 2a - c).
- de-lorioli* *Aeolopneustes* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 48, Pl. 8, figs. 69; GSI Type No. **2505**).
- dentata* *Cyrtoma* Mc' Clelland. See *herschelianus* *Gongrochanus* (Mc' Clelland).
- depressa* *Cidaris* Duncan and Sladen. Miocene Kathiawar (Duncan and Sladen, 1883: 80, Pl. 13, figs. 1 - 3, GSI Type No. **2878**).
- depressa* *Cyrtoma* Mc' Clelland. See *herschelianus* *Gongrochanus* (Mc' Clelland).
- depressa* *Fibularia* Jain. Miocene Kathiawar (Jain, 2002: 124 - 126, Pl. 5, figs. 7 - 12; GSI TYPE Nos. **20767 - 20769**).
- depressa* *Metalia* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 211, Pl. 36, figs. 8 - 10; GSI Type No. **2672**).
- depressus* *Clypeaster* Sowerby. Miocene Sind (Duncan and Sladen, 1882 - 1886: 327); Kachchh (Grant, 1837: 327, Pl. 24, figs. 26-26a; Duncan and Sladen, 1883: 58, Pl. 10, figs. 5 - 6, GSI Type Nos. **2860 - 2862**); Kathiawar (Fedden, 1884: 119; Jain, 2002: 119, Pl. 3, figs. 8 - 9; GSI TYPE Nos. **20750 - 20751**).
- depsangensis* *Globator* Steffani. Cretaceous Karakoram (Steffani, 1928: 175, Pl. 20, figs. 9a - d).
- desori* *Echinodiscus* Duncan and Sladen. Miocene Sind (Duncan and Sladen, 1882 - 1886: 328, Pl. 51, figs. 1, 2; GSI Type Nos. **2768, 2769**) Kachchh (Duncan and Sladen, 1883: 60, Pl. 12, figs. 7-10; GSI Type Nos. **2870 - 2872**).
- desori* var. *Echinodiscus* Duncan and Sladen. Miocene Sind (Duncan and Sladen, 1882 - 1886: 328, Pl. 51, figs. 3, 4, 5, 6, 9, 12; GSI Type Nos. **2770 - 2773** and **2776**).
- Dictyopleurus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 39); Kohat (Davies, 1943: 67).
- difficilis* *Echinolampas* Duncan and Sladen. Oligocene Sind (Duncan and Sladen, 1882 - 1886: 258, Pl. 40, figs. 5 - 7; GSI Type No. **2701**).
- digonus* *Ditremaster* (Archiac). Eocene Sind (Archiac and Haime, 1853: 220, Pl. 15, figs. 10a - c; Duncan and Sladen, 1882 - 1886: 240, Pl. 35, figs. 4-9; GSI Type Nos. **2661** (Lectotype, SD Srivastava, 2004) - **2663** and **2898**; Srivastava, 2004: 129 - 131, pl. 3, figs. 3 - 5); Kohat (Davies, 1943: 70); Salt Range (Theobald, 1881: 81).
- digonus* *Hemiaster* Archiac. See *digonus* *Ditremaster* (Archiac).
- digonus* var. *kohaticus* *Ditremaster* (Davies). Eocene Kohat (Davies, 1943: 70, Pl. 11, figs. 6 - 9).
- digonus* var. *kohaticus* *Hemiaster* Davies. See *digonus* var. *kohaticus* *Ditremaster* (Davies).
- Diplopodia*. Cretaceous Karakoram (Steffani, 1928: 166); Narbada (Chiplonkar, 1937: 62).
- Diplopodia* sp. Cretaceous Karakoram (Steffani, 1928: 166, Pl. 20, figs. 1a - g).
- Diplopodia* (*Tetragramma*). Cretraceous Narbada (Chiplonkar, 1937: 62).
- Discoidea* Leske. Cretaceous Kohat (Currie, 1930: 17); Assam (Das Gupta, 1920: 227; Spengler, 1923: 2).
- Discoidea* sp. Cretaceous Assam (Spengler, 1923: 2).

- discoideus* *Echinolampas* Archiac. Eocene Sind (Blanford, 1876: 13; Blanford, 1879: 48); Oligocene Sind (Archiac and Haime, 1853: 209, Pl. 14, figs. 3a - b; Duncan and Sladen, 1882 - 1886: 261, 263, Pl. 41, figs. 1, 2; GSI Type Nos. 2704 and 2890).
- discoideus* var. *Echinolampas* Duncan and Sladen. Oligocene Sind (Duncan and Sladen, 1882 - 1886: 262, Pl. 41, figs. 3 - 5; GSI Type Nos. 2705, 2706).
- discoideus* var.  $\ddot{\alpha}$  *Echinolampas* Duncan and Sladen. Oligocene Sind (Duncan and Sladen, 1882 - 1886: 263).
- discoideus* var.  $\ddot{\alpha}$  *Echinolampas* Duncan and Sladen. Oligocene Sind (Duncan and Sladen, 1882 - 1886: 263).
- Ditremaster* Munier Chalmas. Cretaceous South India (Kossmat, 1897: 96; Srivastava, 2004: 131); Eocene Sind (Duncan and Sladen, 1882 - 1886: 78, 240; Srivastava, 2004: 129); Kachchh (Srivastava and Srivastava, 1990: 317 - 318).
- Ditremaster* sp. Eocene Kachchh (Srivastava and Srivastava, 1990: 317 - 318, fig. 2).
- Dorocidaris* Agassiz. Cretaceous Narbada (Duncan, 1887a: 87; Fourtau, 1918: 35).
- dorsalis* *Collyrites* (Agassiz and Desor). Jurassic Kachchh (Gregory, 1893: 8, Pl. 2, figs. 4a - b, 5a - c; GSI Type Nos. 6743, 6744).
- cf. douvillei* *Echinoconus* Cotteau and Gauthier. Cretaceous Assam (Spengler, 1923: 21, Pl. 1, figs. 1a - c; GSI Type No. 14118).
- dubius* *Echinus* Sowerby. Eocene Kachchh (Grant, 1837: 327, Pl. 24, fig. 18).
- duracina* *Cyrtoma* Mc' Clelland. See *hereschelianus Gongrochanus* (Mc' Clelland).
- Echinanthus* Breynius. Cretaceous Baluchistan (Noetling, 1894: 126; Noetling, 1897: 22); Eocene Sind (Duncan and Sladen, 1882 - 86: 13); Kachchh (Wynne, 1872: 250); Oligocene and Miocene Sind (Archiac and Haime, 1853: 207).
- Echinobrissus* Gray, 1825. Cretaceous Karakoram (Steffani, 1928: 176); Narbada (Duncan, 1865: 356; Duncan, 1887a: 90; Fourtau, 1918: 44; Chiplonkar, 1937: 63; Chiplonkar, 1939: 236).
- Echinobrissus* sp. Cretaceous Karakoram (Steffani, 1928: 176); Narbada (Chiplonkar, 1937: 63).
- Echinoconus* Breynius. Cretaceous Assam (Spengler, 1923: 2); Baluchistan (Noetling, 1897: 17); South India (Stoliczka, 1873: 106).
- Echinocyamus* Van Phelsum. Cretaceous Assam (Das Gupta, 1929: 26); Eocene Sind (Duncan and Sladen, 1882 - 1886: 132, 137); Kachchh (Duncan and Sladen, 1883: 91); Salt Range (Davies, 1943: 67); Rajasthan (Srivastava and Mathur, 1996: 53 - 56); Oligocene Kachchh (Srivastava, 1978: 421 - 426); Miocene Kathiawar (Srivastava et al., 2009: 97-102).
- Echinodiscus* Breynius (amended Agassiz). Miocene Sind (Duncan and Sladen, 1882 - 1886: 328); Kachchh (Duncan and Sladen, 1883: 60); Pliocene Makran (Duncan and Sladen, 1882 - 1886: 381; Pilgrim, 1908: 41).
- Echinodiscus* sp. Miocene Sind (Duncan and Sladen, 1882 - 1886: 329, Pl. 52, figs. 4 - 7; GSI Type Nos. 2778, 2779).
- Echinoid* gen. et sp. indet. Cretaceous Kohat (Currie, 1930: 19, Pl. 4a, fig. 13; GSI Type No. 14424); Eocene Sind (Duncan and Sladen, 1882 - 1886: 223, Pl. 34, fig. 17; GSI Type No. 2659).
- Echinolampas* Gray. Eocene Sind (Blanford, 1876: 13; Blanford, 1879: 48; Duncan and Sladen, 1882 - 1886: 152); Kachchh (Duncan and Sladen, 1883: 19, 50; Roy and Das Gupta, 1970); Kohat (Davies, 1943: 68); Assam (Medlicott, 1869: 167); Eocene Jammu Himalaya (Srivastava et al., 1992: 98 - 102); Eocene Meghalaya (Srivastava et al., 2008: 514); Oligocene Sind (Archiac and Haime, 1853: 209; Duncan and Sladen, 1882 - 1886: 258); Kachchh (Duncan and Sladen, 1883: 31); Miocene Sind (Blanford, 1879: 57; Duncan and Sladen, 1882 - 1886: 338); Kachchh (Duncan and Sladen, 1883: 33); Tertiary (Eocene - Miocene) Kachchh (Srivastava and Singh, 1999: 25 - 47).
- Echinolampas* sp. Eocene Sind (Duncan and Sladen, 1882 - 1886: 174 Pl. 31, figs. 1-5, p. 176, Pl. 36, figs. 22, 23; GSI Type Nos. 2639 and 2678); Kachchh (Duncan and Sladen, 1883: 31, Pl. 3, figs. 7; GSI Type Nos. 2824, 2892); Oligocene Kachchh (Duncan and Sladen, 1883: 50, Pl. 2, fig. 5; GSI Type No. 2819).
- Echinometra* de Klein. Eocene Sind (Archiac and Haime, 1853: 201).
- Echinus* (Rondel) Linne. Eocene Kachchh (Grant, 1837: 327); Miocene Sind (Archiac and Haime, 1853: 201; Duncan and Sladen, 1882 - 1886: 317).
- elatus* *Cassidulus* Forbes. Cretaceous South India (Forbes, 1845: 162, Pl. 19, figs. 1a - d).
- elatus* *Nucleolites* (*Cassidulus*) (Forbes). Cretaceous South India (Forbes, 1845: 162, Pl. 19, Figs. 1a - d).
- elatus* *Stigmatopygus* (Forbes). See *hereschelianus Gongrochanus* (Mc' Clelland).
- ellipticus* *Cassidulus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 65, Pl. 15, figs. 7 - 10; GSI Type Nos. 2557 - 2558).
- ellipticus* *Echinodiscus* Duncan and Sladen. Miocene Sind (Duncan and Sladen, 1882 - 1886: 330, Pl. 51, fig. 11; GSI Type No. 2775).
- elongata* *Lovenia* Gray. Pliocene Makran (Pilgrim, 1908: 42).
- elongata* *Plesiolumpas* Duncan and Sladen. Cretaceous Sind (Duncan and Sladen, 1882 - 1886: 10, Pl. 1, figs. 8-16; GSI Type No. 2483).
- elongatus* *Echinodiscus* Duncan and Sladen. Miocene Sind (Duncan and Sladen, 1882 - 1886: 331, Pl. 52, fig. 10; GSI Type No. 2774).
- elongatus* *Ditremaster* (Duncan and Sladen). Eocene Sind (Duncan and Sladen, 1882 - 1886: 78, Pl. 19, figs. 7 - 15; GSI Type Nos. 2574 - 2578 (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 131, pl. 3, figs. 11 - 14); Salt Range (Davies, 1943: 70).
- elongatus* *Hemaster* Duncan and Sladen. See *elongatus Ditremaster* (Duncan and Sladen).
- elongatus* *Nucleolites* Chiplonkar and Badve. Cretaceous Narbada (Chiplonkar and Badve, 1972: 142: Pl. 12, figs. 17 and 22).
- elongatus* *Spatangus* Sowerby. Eocene Kachchh (Grant, 1837: 327, Pl. 24, fig. 24).
- emys* *Cassidulus* Stoliczka. Cretaceous South India (Stoliczka, 1873: 101, Pl. 15, fig. 12; GSI Type No. 1674).
- enormis* *Echinanthus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 64, Pl. 17, figs. 5 - 10; GSI Type Nos. 2565 - 2566).
- eocenicus* *Progonechinus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 43, Pl. 10, figs. 1 - 4; GSI Type No. 2509).
- Eocidaris* See *Archeocidaris* M'Coy.
- Eolampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 62).
- Epiaster* Orbigny. See *Heteraster* Orbigny.
- equis* *Coelopleurus* Agassiz. Oligocene Sind (Duncan and Sladen, 1882 - 1886: 251, Pl. 39, figs. 3 - 8; GSI Type Nos. 2692 - 2694).
- Eucidaris* Pomel. Miocene Kathiawar (Jain, 2002: 112).
- spines of *Eucidaris*. Miocene Kathiawar (Jain, 2002: 112, Pl. 1, figs. 1i, 1 and m).
- Eupatagus* Agassiz. See *Eupatagus* (*Eupatagus*) Agassiz.
- Eupatagus* (*Eupatagus*) Agassiz. Eocene Sind (d'Archiac and Haime, 1853: 217; Duncan and Sladen, 1882 - 1886: 235; Srivastava, 2004: 145); Kachchh (Duncan and Sladen, 1883: 46; Srivastava, 2004: 145); Srivastava and Singh, 2008: 83-91); Assam (Spengler, 1923: 71); Oligocene Kachchh (Wynne, 1872: 246; Duncan and Sladen, 1883: 47; Srivastava, 1981: 39); Sind (Blanford, 1876: 14; Blanford, 1879: 52; Duncan and Sladen, 1882 - 1886: 240); Miocene Kachchh Srivastava, 1981: 39).
- Eupatagus* (*Gymnopatagus*) Doderlein. Oligocene Kachchh (Srivastava, 1981: 40 - 41).
- Eurhodia* Archiac and Haime (amended). Eocene Sind (Archiac and Haime, 1853: 214; Duncan and Sladen, 1882 - 1886: 70); Salt Range (Davies and Pinfold, 1937: 62; Davies, 1943: 68).
- Eurygneus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 46).
- Euspatangus* Agassiz. See *Eupatagus* (*Eupatagus*) Agassiz.
- excelsa* *Cidaris* Duncan and Sladen. See *excelsa Prionocidaris* (Duncan and Sladen).
- excelsa* *Prionocidaris* (Duncan and Sladen). Miocene Sind (Duncan and Sladen, 1882 - 1886: 282, Pl. 44, figs. 9 - 10, GSI Type No. 2715);

- Kathiawar (Jain, 2002: 110, Pl. 1, figs. 6 – 7; GSI TYPE No. **20727**).
- excentricus Eolampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 150, Pl. 31, figs. 11 – 15; GSI Type No. **2641**).
- expansus Brissus* Forbes. Cretaceous South India (Forbes, 1845: 160, Pl. 19, fig. 7).
- expansus Hemiaster* (Forbes). Cretaceous South India (Stoliczka, 1873(b): 81, Pl. 11, figs. 2 - 2a; GSI Type No. **1629**).
- faloriensis Clypeaster* Duncan and Sladen. Oligocene Kachchh (Duncan and Sladen, 1883: 50, Pl. 12, fig. 15; GSI Type No. **2877**).
- faringdonensis Cidaris* Wright. Cretaceous South India (Stoliczka, 1873(b): 119, Pl. 17, figs. 29, 30; GSI Type No. **1713, 1714**).
- feddeni Echinolampas* Duncan and Sladen. Eocene Kachchh (Duncan and Sladen, 1883: 23, Pl. 1, figs. 8-11, Pl. 3, fig. 2; GSI Type No. **2818**); Oligocene Kachchh (Srivastava and Singh, 1999: 31 – 32, Pl. 6, figs. 1 – 6).
- Fibularia* Lamarck. Miocene Kachchh (Srivastava, 1978: 426); Kathiawar (Jain, 2002: 124).
- flemingi Conocyclus* Archiac and Haime. Eocene Salt Range (Archiac and Haime, 1853: 215, Pl. 15, fig. 1; Wynne, 1879: 295); Kachchh (Wynne, 1872: 252); Baluchistan (Ball, 1874: 152).
- forbesi Coelopleurus* Archiac and Haime. Oligocene Sind (Blanford, 1876: 14; Blanford, 1879: 52); Miocene Sind (Archiac and Haime, 1853: 200, Pl. 13, fig. 6; Duncan and Sladen, 1882 - 1886: 287, Pl. 46, figs. 1,2,4,7,9; GSI Type Nos. **2744 - 2745** and **2751**); Kachchh (Duncan and Sladen, 1883: 53, Pl. 12, fig. 1; GSI Type Nos. **2866** and **2889**); Kathiawar (Jain, 2002: 112, Pl. 1, figs. 8; GSI TYPE No. **20728**).
- forbesi Coelopleurus* Archiac and Haime (Premature form), Miocene Sind (Duncan and Sladen, 1882 - 1886: 295, Pl. 46, fig. 4; GSI Type No. **2747**).
- forbesiana Cidaris* de Kon. Permian Salt Range (de Koninck, 1862: 4, Pl. 4, figs. 1, 2; Verneuil, de, 1866: 214, Pl. 4, figs. 1,2).
- forbesiana Eocidaris* de Kon. See *forbesiana Archaeocidaris* (de Kon).
- forbesiana Archaeocidaris* (de Kon). Permian Salt Range (Waagen, 1885: 819, Pl. 95, figs. 5 – 16; GSI Type Nos. **3849 - 3860**).
- fourtau Hemiaster* (Mecaster) (Cotteau). See *cenomensis Hemiaster* (Hemiaster) Cotteau.
- frasi Salenia* Cotteau. Cretaceous Narbada (Duncan, 1887a: 90; GSI Type No. **4303**).
- front-acutus Hemiaster* Stoliczka. See *front-acutus Hemiaster* (Mecaster) (Stoliczka).
- front-acutus Hemiaster* (Mecaster) (Stoliczka). Cretaceous South India (Stoliczka, 1873(b): 83, Pl. 11, figs. 7,8; GSI Type Nos. **1634** (Lectotype, SD Srivastava, 2004) - **1638**; Srivastava, 2004: 141, pl. 2, fig. 9).
- gabrielis Hemiaster* Cotteau, Peron and Gauthier. Cretaceous Karakoram (Steffani, 1928: 181, Pl. 21, figs. 4a - c and 5a-b).
- gajensis Temnechinus* Duncan and Sladen. Miocene Sind (Duncan and Sladen, 1882 - 1886: 305, Pl. 47, figs. 10 – 11; GSI Type No. **2756**).
- Galerites*. Eocene Kachchh (Grant, 1837: 327).
- galerus Conocyclus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 129, Pl. 24, figs. 5 – 10; GSI Type No. **2599, 2600**).
- garoensis Echinolampas* Srivastava et al. Eocene Meghalaya (Srivastava et al., 2008(d): 514, Pl.I, figs. 1-9, Holotype No. LUGD/I/2020)
- cf. *gigantia Pyrina* Noetling. Cretaceous Baluchistan (Noetling, 1894: 126; Noetling, 1897: 21, Pl. 4, figs. 6 – 6c; GSI TYPE No. **2981**; Hayden, 1914: 14).
- gigas Echinoconus* Cotteau. Cretaceous Baluchistan (Noetling, 1897: 17, Pl. 3, figs. 2 – 2a; GSI TYPE Nos. **2973** and **3099**).
- Gitolampas* Gauthier, 1889. Srivastava et al. Eocene Meghalaya (Srivastava et al., 2008:515)
- Globator* Cretaceous Karakoram (Steffani, 1928: 175).
- goirensis Clypeaster* Duncan and Sladen. Miocene Kachchh (Duncan and Sladen, 1883: 59, Pl. 12, figs. 14 & 16; GSI Type No. **2876**); Kathiawar (Jain, 2002: 119, Pl. 4, figs. 1 – 3; GSI TYPE Nos. **20752 - 20753**).
- Gongrochanus* Kier. Cretaceous South India (Stoliczka, 1873: 98; Kossmat, 1897; Rama Rao, 1927: 156; Badve and Aziz, 1983: 231 – 246; Srivastava, 2003 (a)); Assam (Mc Clelland, 1840: 155 – 187; Das Gupta, 1920: 296 – 300; Spangler, 1923: 5; Bhattacharya and Bhattacharya, 1978: 9 – 24).
- Goniocidaris* Desor. Miocene Kachchh (Duncan and Sladen, 1883: 52); Pliocene Makran (Pilgrim, 1908: 41).
- (?) spines of *Goniocidaris* Desor. Miocene Kachchh (Duncan and Sladen, 1883: 52, Pl. 8, figs. 10 – 14; GSI Type No. **2849 - 2853**).
- Goniopygus* Cretaceous Assam (Das Gupta, 1929: 25).
- Goniopygus* sp. Cretaceous Assam (Das Gupta, 1929: 25, Pl. 2, figs. 2, 2a).
- goybeti Echinobrissus* Cotteau. Cretaceous Narbada (Duncan, 1887a: 90; GSI Type No. **4304**).
- Grammechinus* Duncan and Sladen. Miocene Kathiawar (Duncan and Sladen, 1883: 82; Jain, 2002: 114).
- grandis Eurypterus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 46, Pl. 8, figs. 4 – 5; GSI Type No. **2504**).
- granti Schizaster* Duncan and Sladen. See *granti Schizaster* (*Schizaster*) (Duncan and Sladen).
- granti Schizaster* (*Schizaster*) (Duncan and Sladen). Oligocene - Miocene Sind (Duncan and Sladen, 1882 – 1886: 268, 339, Pl. 43, figs. 4 – 6; GSI Type No. **2709** (Lectotype, SD Srivastava, 2004) - **2710**; Srivastava, 2004: 145, pl. 4, fig. 9; pl. 5, figs. 1 - 4); Kachchh (Duncan and Sladen, 1883: 70, Pl. 6, figs. 8 – 12; GSI Type No. **2836**); Miocene Kathiawar (Duncan and Sladen, 1883: 88; Jain, 2002: 127, Pl. 6, figs. 24 – 26; GSI TYPE Nos. **20779 - 20781**).
- granulata Cidaris* Duncan and Sladen. See *granulata Prionocidaris* (Duncan and Sladen).
- granulata Prionocidaris* (Duncan and Sladen). Miocene Kathiawar (Duncan and Sladen, 1883: 80, Pl. 13, figs. 4 – 6; GSI Type No. **2879**; Jain, 2002: 110, Pl. 1, figs. 2 – 5; GSI TYPE Nos. **20724 - 20726**).
- granulatus Lepidopleurus* Duncan and Sladen. Miocene Sind (Duncan and Sladen, 1882 – 1886: 308; GSI Type No. **2897**).
- griesbachii Echinanthus* Noetling. Cretaceous Baluchistan (Noetling, 1894: 126; Noetling, 1897: 22, Pl. 5, figs. 1 – 1a, 2 - 2b; GSI TYPE Nos. **2982 - 2985** and **3100**; hayden, 1914: 14).
- griffithiae Cyrtoma* Mc' Clelland. See *herschelianus Gongrochanus* (Mc' Clelland).
- aff. *grossouvrei Hemiaster* Gauth. Cretaceous Tibet (Hayden, 1907: 163).
- guvarensis Echinolampas* Srivastava and Singh. Oligocene Kachchh (Srivastava and Singh, 1999: 32, Pl. 6, figs. 7 – 8; Pl. 7, figs. 1 - 3).
- guvarensis Fibularia* Lamarck. Miocene Kachchh (Srivastava, 1978: 426, Pl. 1, figs. 10 - 14).
- haimei Dictyopleurus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 39, Pl. 9, figs. 4 – 5; GSI Type No. **2507**).
- haimei* var. *Dictyopleurus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 40; GSI Type No. **2886**).
- haimei Echinolampas* Duncan and Sladen. Eocene Kachchh (Duncan and Sladen, 1883: 27, Pl. 2, figs. 6 – 8; GSI Type No. **2821**); Oligocene Kachchh (Srivastava and Singh, 1999: 32 – 33, Pl. 8, figs. 1 – 9).
- halaensis Cidaris* Archiac and Haime. Miocene Sind (Archiac and Haime, 1853: 196, Pl. 13, fig. 2); Kachchh (Duncan and Sladen, 1883: 51, Pl. 8, figs. 7 – 8; GSI Type No. **2847**); Kathiawar (Fedden, 1884: 121).
- cf. *halaensis Clypeaster* Archiac and Haime (?). Pliocene Makran (Blanford, W. T.: 45)
- halensis Echinanthus* Archiac and Haime. Eocene Sind (Archiac and Haime, 1853: 208, Pl. 14, figs. 1a - b).
- hanguensis Echinolampas* Davies. Eocene Kohat (Davies, 1943: 68, Pl. 11, figs 2 – 5).
- aff. *hardwickii Temnopleus* Agassiz. Pliocene Makaran (Pilgrim, 1908: 41).

- harshadae Brissopsis* Srivastava. Miocene Kathiawar (Srivastava, 2003 (b): 99 - 102, Pl. 1, figs. 1 - 5; GSI TYPE Nos. **20788 - 20789**).
- harshadi Metalia* Jain. See *harshadae Brissopsis* Srivastava.
- haydeni Echinobrissus* Fourtau. Cretaceous Narbada (Fourtau, 1918: 44, Pl. 2, fig. 1; GSI Type No. **11947**).
- heberti Hemaster (Mecaster)* (Coquand). Cretaceous Narbada (Chiplonkar, 1939: 241; Chiplonkar and Badve, 1972: 148, Pl. 12, figs. 4, 8 and 19).
- helios Clypeolampas* Noetling. Cretaceous Baluchistan (Noetling, 1894: 126 nn; Noetling, 1897: 24, Pl. 5, figs. 3 - 3b, 4, 5 - 5a; GSI TYPE Nos. **2986 - 2987**).
- Hemaster Agassiz*. Cretaceous Assam (Das Gupta, 1920: 297; Spengler, 1923: 7); Baluchistan (Noetling, 1894: 126 nn; Noetling, 1897: 35; Vredenburg, 1908: 174); Karakoram (Steffani, 1928: 180); South India (Stoliczka, 1873 (a): 81; Kossmat, 1897: 95); Eocene Sind (Archiac and Haime, 1853: 220; Duncan and Sladen, 1882 - 1886: 78); Kohat and Salt Range (Davies, 1943: 69; Theobald, 1881: 81); Kachchh (Duncan and Sladen, 1883: 35).
- Hemaster* sp. Cretaceous Assam (Das Gupta, 1920: 297; Spengler, 1923: 7); Karakoram (Steffani, 1928: 180).
- Hemaster (Hemaster)* Lambert and Thiery. Cretaceous South India (Stoliczka, 1873(b): 80 - 85; Fourtau, 1918: 46; Srivastava, 2004: 131); Baluchistan (Noetling, 1894: 126 nn; Noetling, 1897: 36); Eocene Sind (Duncan and Sladen, 1882 - 1886: 196, 198; Srivastava, 2004: 131); Kachchh (Duncan and Sladen, 1883: 34); Narbada (Duncan, 1865: 355; Duncan, 1887 (a): 91; Fourtau, 1918: 46; Chiplonkar, 1937: 64; Chiplonkar, 1939: 240; Chiplonkar and Badve, 1972: 144).
- Hemaster (Malwaster)* Chiplonkar and Badve. Cretaceous Narbada (Fourtau, 1918: 50 - 51; Chiplonkar and Badve, 1974: 51 - 53; Srivastava, 2004: 137).
- Hemaster (Mecaster)* Pomel. Cretaceous South India (Stoliczka, 1873 (a): 83 - 88); Narbada (Duncan, 1887a: 91; Chiplonkar, 1939: 237; Chiplonkar and Badve, 1972: 146; Srivastava, 2004: 139).
- Hemaster (Mecaster)* sp. Eocene Sind (Duncan and Sladen, 1882 - 1886: 81, 201, Pl. 35, figs. 25, 26; GSI Type Nos. **2668, 2887 and 2900**); Kachchh (Duncan and Sladen, 1883: 35, Pl. 6, figs. 1, 2; GSI Type No. **2833**).
- Hemicidaris* Agassiz. See *Recrosalenia* Currie.
- Hemipneustes* Agassiz. Cretaceous Baluchistan (Noetling, 1894: 126; Noetling, 1897: 29); South India (Aziz and Badve, 1990: 326).
- cf. *hemisphaericus Echinoconus* Breyne. Cretaceous Assam (Spengler, 1923: 4, Pl. 1, figs. 2a - c; GSI Type No. **14119**).
- hemisphaericus Lepidopleurus* Duncan and Sladen. Miocene Sind (Duncan and Sladen, 1882 - 1886: 306, Pl. 47, figs. 5 - 7; GSI Type No. **2754**).
- herschelliana Cyrtoma* Mc' Clelland. See *herschelianus Gongrochanus* (Mc' Clelland).
- herschelianus Gongrochanus* (Mc' Clelland). Cretaceous Assam (Mc' Clelland, 1840: 185; Das Gupta, 1920: 297; Spengler, 1923: 5, Pl. 1, figs. 3 - 6; GSI Type Nos. **14120 - 14123**; South India (Stoliczka, 1873: 98, Pl. 15, figs. 1 - 8; GSI Type Nos. **1664 - 1670**; Rama Rao L., 1927: 157; Badve and Aziz, 1983: 233, figs. 3a - c).
- Heteraster* Orbigny. Cretaceous South India (Stoliczka, 1873(b): 90; Srivastava, 2004: 129).
- Heterodiadema*. Cretaceous Karakoram (Steffani, 1928: 164).
- Hipponeo* Gray. Miocene Sind (Duncan and Sladen, 1882 - 1886: 310).
- Hikelaster* Lambert and Thiery. Miocene Kachchh (Duncan and Sladen, 1883: 67; Srivastava, 2004: 147).
- hirudo Cidaris* Sorniget. Cretaceous South India (Stoliczka, 1873(b): 118, Pl. 17, figs. 3 - 16; GSI Type Nos. **1688 - 1701**).
- Holaster* Agassiz. Cretaceous Karakoram (Steffani, 1928: 188); Kohat (Currie, 1930: 21); South India (Forbes, 1845: 159; Stoliczka, 1873(b): 94).
- Holaster* sp. Agassiz. Cretaceous Kohat (Currie, 1930: 21, Pl. 4a, figs. 14 - 15; GSI Type Nos. **14425 - 14428**).
- Holectypoid genus indeterminate Srivastava and Singh. Eocene Kachchh Srivastava and Singh, 2001: 32 - 35, Pl. 3, figs. 1 - 4).
- Holectypus* Desor. Jurassic Kachchh (Gregory, 1893: 7); Cretaceous South India (Stoliczka, 1873: 107); Baluchistan (Noetling, 1894: 126; Noetling, 1897: 18).
- Holectypus* sp. Cretaceous South India (Stoliczka, 1873(b): 107, Pl. 16, fig. 5; GSI Type No. **1681**).
- holoambitatus Hemaster* Chiplonkar. Cretaceous Narbada (Chiplonkar, 1937: 64, Pl. 6, figs. 4a - 4c; Chiplonkar and Badve, 1972: 144 - 145, Pl. 12, figs. 9 and 13).
- holoambitatus Hemaster (Malwaster)* (Chiplonkar and Badve). Cretaceous Narbada (Fourtau, 1918: 51, Pl. 2, fig. 4; GSI Type No. **11951** (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 139, pl. 7, fig. 1).
- hookeri Temnopleurus* Archiac and Haime. Eocene Sind (Archiac and Haime, 1853: 203, Pl. 13, figs. 8a - b); Miocene Kachchh (Wynne, 1872: 257).
- Hypselauster* Clark, 1917. Eocene Rajasthan (Srivastava and Kulshreshtha, 2009: 229).
- Ilarionia* Dames. Eocene Sind (Duncan and Sladen, 1882 - 1886: 179).
- inaequalis Brissus* Forbes. Cretaceous South India (Forbes, 1845: 160, Pl. 19, fig. 6).
- inaequalis Hemaster* (Forbes). See *inaequalis Hemaster (Mecaster)* (Forbes).
- inaequalis Hemaster (Mecaster)* (Forbes). Cretaceous South India (Stoliczka, 1873(b): 84, Pl. 12, figs. 2, 3; GSI Type Nos. **1640, 1641** (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 141, pl. 1, figs. 11 - 14).
- indica Echinolampas* Duncan and Sladen. Miocene Kachchh (Duncan and Sladen, 1883: 61, Pl. 9, figs. 1 - 7; GSI Type Nos. **2854, 2855**; Srivastava and Singh, 1999: 33, Pl. 9, figs. 5 - 6).
- indica* var. *Echinolampas* Duncan and Sladen. Miocene Kachchh (Duncan and Sladen, 1883: 61, Pl. 9, figs. 8 - 10; GSI Type No. **2856**).
- indica* *Linthia* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 82, Pl. 20, figs. 1 - 8; GSI Type Nos. **2579 - 2583**).
- indica Orthopsis* Cretaceous Narbada (Fourtau, 1918: 44).
- indicus Hemaster* Stoliczka. See *indicus Hemaster (Hemaster)* (Stoliczka).
- indicus Hemaster (Hemaster)* (Stoliczka). Cretaceous South India (Stoliczka, 1873(b): Pl. 12, figs. 6, 7; Pl. 13, fig. 1; GSI Type Nos. **1644, 1645** (Lectotype, SD Srivastava, 2004) and **1648**; Srivastava, 2004: 135, pl. 1, figs. 3 - 5).
- indicus Hemipneustes* Aziz and Badve. Cretaceous South India (Aziz and Badve, 1990: 326 - 330, fig. 2; Holotype No. MACS - G - **2104**).
- indicus Holaster* Forbes. Cretaceous South India (Forbes, 1845: 159, Pl. 19, figs. 4a, b; Stoliczka, 1873: 94, Pl. 14, figs. 5, 5a; GSI Type No. **1660**).
- indicus Orthopsis* Duncan. Cretaceous Narbada (Duncan, 1887a: 88, figs. 4 - 8; GSI Type Nos. **4301 and 11946**; Duncan, 1887b: 153; Fourtau, 1918: 44).
- aff. *infra* *Discoidea* Desor. Cretaceous Assam (Das Gupta, 1920: 297).
- insignis Echinolampas* Duncan and Sladen. Eocene Kachchh (Duncan and Sladen, 1883: 29, Pl. 3, figs. 6 - 8; GSI Type No. **2823**; Roy and Das Gupta, 1970).
- insignis Schizobrissus* (Duncan and Sladen). Eocene Kachchh (Srivastava and McNamara, 2010: 4, figs. 2A-H, 3A-J; GSI Type No. **2830** (Holotype).
- insignis Peripneustes* Duncan and Sladen. See *insignis Meoma (Schizobrissus)* (Duncan and Sladen).
- intermedius Echinanthus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 177, Pl. 32, figs. 4 - 8; GSI Type No. **2643**).
- jacquemonti Echinolampas* Archiac and Haime. Miocene Sind (Archiac and Haime, 1853: 211, Pl. 14, figs. 5a, b; Duncan and Sladen, 1882 - 1886: 332, Pl. 53, figs. 1 - 14; GSI Type Nos. **2780 - 2786**); Kachchh (Duncan and Sladen, 1883: 64; Srivastava and Singh, 1999: 33, Pl. 9, figs. 7 - 9).
- jaisalmerensis Echinocyamus* Srivastava and Mathur. Eocene Rajasthan (Srivastava and Mathur, 1996: 53 - 56, Pl. 1, figs. 1 - 9).
- jaisalmerensis Hemicidaris* Sahni and Bhatnagar. See *jaisalmerensis*

- Recrosalenia* (Sahni and Bhatnagar).
- jaisalmerensis Megapneustes* Srivastava et al. Middle Eocene Rajasthan (Srivastava et al., 2008: 32; Pl. I, figs. 1–3, 5–8; Holotype: GU/R/KE/2023).
- jaisalmerensis Acrosalenia* (Sahni and Bhatnagar in Sahni) Srivastava et al. Jurassic Rajasthan (Srivastava et al., 2010: 59–64, Pl. 1, figs. 1–6, Pl. 2 figs. 1–4, text fig. 2; GSI Type Nos. 17634 (Holotype) and 17637 (Paratype); SKK 01 and 02 (Paratypes).
- jigniensis Echinolampas* Srivastava, Mishra and Srivastava. Eocene Jammu Himalaya (Srivastava et al., 1992: 98 – 102, Pl. 1, figs. 1 – 4; Pl. 2, figs. 1 – 5).
- jugamis Toxaster* Aziz and Badve. Cretaceous South India (Aziz and Badve, 2001: 57, Pl. 5, figs. 1 – 3; Holotype No. MACS - G - **2138**).
- juvenilis Echinolampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 170, Pl. 30, figs. 16 – 18; GSI Type No. **2638**).
- Kachchhia* Srivastava et al., Middle Eocene (Srivastava et al., 2008: 107)
- kachensis Echinolampas* Duncan and Sladen. Eocene Kachchh (Duncan and Sladen, 1883: 25, Pl. 2, figs. 1 – 4; GSI Type No. **2819**; Roy and Das Gupta, 1970).
- kamrupensis Echinocyamus* Das Gupta. Cretaceous Assam (Das Gupta, 1929: 26, PL. 2, fig. 3).
- keatingi Salenia* Fourtau. Cretaceous Narbada (Fourtau, 1918: 38, Pl. 1, fig. 3; GSI Type No. **11944**).
- khariensis Echinolampas* Srivastava and Singh. Eocene Kachchh (Srivastava and Singh, 1999: 26 – 27, Pl. 2, figs. 1 – 5).
- kieri Gongrochanus* Badve and Aziz. See *herschellianus Gongrochanus* (Mc' Clelland).
- kieri Tridium* Tandon and Srivastava. Eocene Kachchh (Tandon and Srivastava, 1980: 1 – 3, Pl. 1, figs. 1 – 6).
- krishi Kachchhia* Srivastava et al. Middle Eocene Kachchh (Srivastava et al., 2008(a): 108, Pl. I, figs. 1–9; Holotype LUGD\*/I/**2028**).
- kurangaensis Clypeaster* Jain. Miocene Kathiawar (Jain, 2002: 123 – 124, Pl. 5, figs. 3 – 4; GSI TYPE Nos. **20764 - 20765**).
- lacrymula Cidaris* Duncan and Sladen. Cretaceous Sind (Duncan and Sladen, 1882 – 1886: 8, Pl. 1, figs. 1 – 7; GSI Type No. **2482**).
- Laganum* Klein. Pliocene Makran (Duncan and Sladen, 1882 – 1886: 379).
- latus Amblypygus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 148, Pl. 27, figs. 7 – 9; GSI Type No. **2622**).
- lepadiformis Echinolampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 172, Pl. 31, figs. 6 – 10; GSI Type No. **2640**).
- Lepidopleurus* Duncan and Sladen. Miocene Sind (Duncan and Sladen, 1882 – 1886: 306).
- leymeriei Hemipneustes* Hebert. Cretaceous Baluchistan (Noetling, 1897: 32, Pl. 7, figs. 2 – 2a; GSI TYPE No. **2993**).
- libicum* Des. var. *asiatica Heterodiadema* Steffani. Cretaceous Karakoram (Steffani, 1928: 164, Pl. 19, figs. 4, 5, 6a – c, 7a – d and 8a – b).
- Limpasiaster* Aziz and Badve. Cretaceous South India (Aziz and Badve, 2001: 50).
- Linthia* Merian. Cretaceous Sind (Duncan and Sladen, 1882 – 1886: 8); Karakoram (Steffani, 1928: 182); Eocene Sind (Duncan and Sladen, 1882 – 1886: 82).
- linthia* sp. Eocene Sind (Duncan and Sladen, 1882 – 1886: 85, Pl. 20, fig. 9; GSI Type No. **2584**).
- lipiformis Echinolampas* Srivastava and Singh. Eocene Kachchh (Srivastava and Singh, 1999: 27 – 28, Pl. 2, figs. 6 – 8).
- Lovenia* Agassiz and Desor. Pliocene Makran (Pilgrim, 1908: 42).
- lowraliensis Echinocyamus* Srivastava et al.. Miocene Kathiawar (Srivastava et al., 2009: 100, Pl. 1, figs. 1 – 3; GSI TYPE No. **21425**).
- lucae Echinolampas* (Desor). Oligocene Kachchh (Srivastava and Singh, 1999: 33, Pl. 7, figs. 4 – 5; Pl. 9, figs. 1 – 2).
- (?) *Macropneustes* Agassiz. See *Macropneustes (Macropneustes)* Agassiz. *Macropneustes (Macropneustes)* Agassiz. Eocene Sind (Duncan and Sladen, 1882 – 1886: 229, 232; Srivastava, 2004: 147).
- macrostoma Cyphosoma* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 116, Pl. 22, figs. 8 – 10; GSI Type No. **2594**).
- malwaensis Echinobrissus* Chiplonkar. See *malwaensis Nucleolites* (Chiplonkar).
- malwaensis Nucleolites* (Chiplonkar). Cretaceous Narbada (Chiplonkar, 1939: 236, Pl. 25, fig. 1; Chiplonkar and Badve, 1972: 143 -144, Pl. 12, figs. 20 and 12).
- Mareta* Gray. Miocene Kathiawar (Jain, 2002: 130).
- marinelli Holaster* Steffani. Cretaceous Karakoram (Steffani, 1928: 177, Pl. 20, figs. 10a – f).
- mathuri Salenia* Chiplonkar. Cretaceous Narbada (Chiplonkar, 1937: 61, Pl. 6, figs. 3a – d; Chiplonkar and Badve, 1972: 138, Pl. 11, figs. 14 - 16).
- mcmamarae Gitolampas* Srivastava et al. Eocene Meghalaya (Srivastava et al., 2008(d): 515, Pl. I, figs. 1-9, Holotype No. LUGD/I/2027)
- Mecaster* Pomel, 1883. Cretaceous Narbada Valley (Smith, 2010; Srivastava, 2011).
- Megapneustes* Srivastava et al. Middle Eocene Rajasthan (Srivastava et al., 2008: 32).
- meslei Hemister* (Mecaster) Peron and Gauthier. Cretaceous Narbada (Chiplonkar, 1937: 65; Chiplonkar and Badve, 1972: 148, Pl. 12, figs. 1 and 5).
- Metalia* Gray. Eocene Sind (Duncan and Sladen, 1882 – 1886: 93, 206); Kohat (Davies, 1943: 71); Miocene Kathiawar (Jain, 2002: 128).
- Metalia* sp. Eocene Sind (Duncan and Sladen, 1882 – 1886: 215, Pl. 36, figs. 15 – 17; GSI Type Nos. **2674, 2675**).
- Micraster* Agassiz. Cretaceous South India (d'Orbigny, 1847); Eocene Sind (Duncan and Sladen, 1882 – 1886: 189); Kohat (Davies, 1943: 71).
- Micropedina* Cotteau. Cretaceous Karakoram (Steffani, 1928: 167); South India (Stoliczka, 1873: 11).
- Micropsis* Cotteau. Eocene Sind (Duncan and Sladen, 1882 – 1886: 119); Kohat (Davies, 1943: 66); Baluchistan (Vredenburg, 1901: 261).
- Micropsis* sp. Eocene Kohat (Davies, 1943: 66).
- aff. *micropyga Diplopodia (Tetragramma)* Fourtau. Cretaceous Narbada (Chiplonkar, 1937: 62, Pl.6, figs. 1a – b).
- minor Paralampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 74, Pl. 17, figs. 1 – 4; GSI Type Nos. **2563, 2564**).
- Moira* Agassiz. See *Moira (Moiopsis)* Agassiz.
- Moira (Moiopsis)* Agassiz. Eocene Sind (Duncan and Sladen, 1882 – 1886: 225); Miocene Sind (Duncan and Sladen, 1882 – 1886: 342); Kachchh (Duncan and Sladen, 1883: 64; Srivastava, 2004: 143); Miocene Kathiawar (Jain, 2002: 127).
- (?) *Moira* sp. See (?) *Moira (Moiopsis)* sp.
- (?) *Moira (Moiopsis)* sp. Miocene Sind (Duncan and Sladen, 1882 – 1886: 342; GSI Type No. **2903**).
- mongraensis Phymosoma* Chiplonkar and Badve. Cretaceous Narbada (Chiplonkar and Badve, 1972: 140 - 141, Pl. 11, figs. 5 – 6).
- monticulifera Clypeaster* Duncan and Sladen. Oligocene Sind (Duncan and Sladen, 1882 – 1886: 258, Pl. 40, figs. 3, 4; GSI Type No. **2700**).
- moriensis Amblypygus* Srivastava and Singh. Eocene Kachchh (Srivastava and Singh, 2001: 28 – 30, Pl. 2, figs. 4 – 7; Pl. 3, figs. 5 - 7).
- morrisi Eurhodia* Archiac and Haime. Eocene Sind (Archiac and Haime, 1853: 214, Pl. 14, figs. 7a - c; Duncan and Sladen, 1882 – 1886: 70, Pl. 18, figs. 1 – 7; GSI Type Nos. **2569 - 2571**).
- morrissi* (Archiac) var. *salsensis Eurhodia* Davies. Eocene Salt Range (Davies and Pinfold, 1937: 62, Pl. 7, figs. 20, 25, text fig. 4c; GSI Type Nos. **15896, 15897**; Davies, 1943: 68, Pl.11, fig. 10).
- Mortonia* Gray. Miocene Kathiawar (Jain, 2002: 126).
- multituberculata Breynea* Vredenburg. Oligocene Sind and Baluchistan (Vredenburg, 1906b: 271, Pl. 38, figs. 1 – 4; GSI Type Nos. **8428 - 8430**).
- mutabilis Mecaster* (Lambert, 1933). Cretaceous Narbada Valley (Smith, 2010; Srivastava, 2011).

- namadica* *Dorocidaris* Duncan. Cretaceous Narbada (Duncan, 1887a: 87, figs. 2, 3; GSI Type Nos. **11941**, **11942** and **11952**; Fourtau, 1918: 35, Pl. 1, figs. 1 – 2, GSI Type No. **11943**). **Synonyme:** *Cidaris namadicus* Duncan.
- namadicum* *Cyphosoma* Fourtau. See *namadicum* *Phymosoma* (Fourtau).
- namadicum* *Phymosoma* (Fourtau). Cretaceous Narbada (Fourtau, 1918: 41, Pl. (?), fig. 4; GSI Type No. **11945**; Chiplonkar and Badve, 1972: 141 – 142, Pl. 11, figs. 13 – 17).
- namadicus* *Cidaris* Duncan. Cretaceous Narbada (Duncan, 1887a: 87, figs. 1 – 3, 4 – 8; GSI Type Nos. **4298** - **4300**; Duncan, 1887b: 153; Chiplonkar and Badve, 1972: 137 – 138, Pl. 11, figs. 1, 4 and 7).
- Neocatopodus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 76).
- newboldi* *Schizaster* Archiac and Haime. Eocene Sind (Archiac and Haime, 1853: 222, Pl. 15, fig. 2); Baluchistan (Ball, 1874: 152).
- cf. *newboldi* *Schizaster* Archiac and Haime. Oligocene Sind (Blanford, 1876: 14; Blanford, 1879: 125).
- nobilis* *Epiaster* Stoliczka. See *nobilis* *Heteraster* (Stoliczka).
- nobilis* *Hemiaster* Duncan and Sladen. See *nobilis* *Hemiaster* (*Hemiaster*) (Duncan and Sladen).
- nobilis* *Hemiaster* (*Hemiaster*) (Duncan and Sladen). Eocene Sind (Duncan and Sladen, 1882 – 1886: 196, Pl. 34, figs. 8 – 11; GSI Type No. **2656** (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 135, pl. 4, fig. 12).
- nobilis* *Heteraster* (Stoliczka). Cretaceous South India (Stoliczka, 1873(b): 90, Pl. 13, figs. 7, 8; GSI Type Nos. **1654** (Lectotype, SD Srivastava, 2004), **1655**; Srivastava, 2004: 129, pl. 2, figs. 1 – 4).
- nodulosus* *Acanthechinus* Eocene Sind (Duncan and Sladen, 1882 – 1886: 34, Pl. 8, figs. 1 – 3; GSI Type No. **2503**).
- Noetlingaster* Vredenburg. See *Protechinus*.
- Nucleolites* Lamarck. Cretaceous Narbada (Duncan, 1887a: 91; Chiplonkar and Badve, 1972: 142); South India (Stoliczka 1873: 104).
- Nucleolites* (*Cassidulus*) Lamarck. Cretaceous South India (Forbes, 1845: 162).
- Nucleolites* (*Pygorhynchus*) Lamarck. Cretaceous South India (Forbes, 1845: 161).
- nummuliticus* *Echinolampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 167, Pl. 30, figs. 12 – 15; GSI Type No. **2637**).
- nummuliticum* *Cyphosoma* Archiac. Eocene Sind (Archiac and Haime, 1853: 197, Pl. 13, figs. 4a, b).
- nummuliticum* *Phymosoma* Archiac and Haime. See *nummuliticum* *Cyphosoma* Archiac.
- nummuliticus* *Echinocyamus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 132, Pl. 25; GSI Type Nos. **2609** - **2611**); Salt Range (Davies, 1943: 67).
- nummuliticus* var. *bernaniensis* *Echinocyamus* Srivastava. Oligocene Kachchh (Srivastava, 1978: 423, Pl. 1, figs. 6 – 7).
- nummuliticus* var. *obesus* *Echinocyamus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 132, Pl. 25, figs. 21 – 24).
- nummuliticus* var. *oviformis* *Echinocyamus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 135, Pl. 25, figs. 25 – 26; GSI Type No. **2612**).
- nummuliticus* var. *planus* *Echinocyamus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 135, Pl. 25, figs. 29 – 32; GSI Type No. **2613**).
- obesa* *Echinolampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 157, Pl. 28, figs. 12 – 16; GSI Type No. **2625**).
- obliquata* *Spatangus* Sowerby. Eocene Kachchh (Grant, 1837: 327, Pl. 24, fig. 22).
- aff. *oblongus* *Brissus* Wright. Pliocene Makran (Pilgrim, 1908: 42).
- oblongus* *Clypeaster* Sowerby. Miocene Kachchh (Grant, 1837: 327, Pl. 24, figs. 25, 25a).
- oldhami* *Hemiaster* Fourtau. See *cenomensis* *Hemiaster* (*Hemiaster*) (Cotteau).
- oldhaminus* *Cassidulus* Stoliczka. See *oldhaminus* *Progongrochanus* (Stoliczka).
- oldhaminus* *Progongrochanus* (Stoliczka). Cretaceous South India (Stoliczka, 1873: 100, Pl. 15, figs. 10, 11; GSI Type Nos. **1672**, **1673**; Aziz and Badve, 2001: 48).
- olispionensis* *Micropedina* (Forbes). Cretaceous Karakoram (Steffani, 1928: 167, Pl. 20, figs. 2a - c, 3, 4, 5a - c, 6, and 7).
- Opechinus* Desor. Eocene Sind (Archiac and Haime, 1853: 206; Duncan and Sladen, 1882 – 1886: 122); Miocene Sind (Duncan and Sladen, 1882 – 1886: 303); Kachchh and Kathiawar (Duncan and Sladen, 1883: 57, 84); Kathiawar (Duncan and Sladen, 1883: 86; Jain, 2002: 114).
- Opissaster*. Cretaceous Narbada (Fourtau, 1918: 50); South India (Kossmat, 1897: 95; Srivastava, 2004: 143); Eocene Kachchh (Duncan and Sladen, 1883: 35; Srivastava, 2004: 143).
- Opissaster* sp. Cretaceous Narbada. See *holoambitus* *Hemiaster* (*Malwaster*) (Chiplonkar and Badve).
- opipara* *Cidaris* Duncan and Sladen. Miocene Sind (Duncan and Sladen, 1882 – 1886: 279, Pl. 44, figs. 1 – 8; GSI Type Nos. **2713** - **2714**).
- orbignyanus* var. *minor* *Hemiaster* Steffani. Cretaceous Karakoram (Steffani, 1928: 178, Pl. 21, figs. 1a – e).
- orientalis* *Cardiaster* Stoliczka. Cretaceous South India (Stoliczka, 1873: 92, Pl. 14, figs. 1, 2; GSI Type Nos. **1656**, **1657**).
- orientalis* *Linthia* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 217, Pl. 37, figs. 7 – 14; GSI Type Nos. **2680** - **2682**).
- orientalis* *Pyrina* Cotteau and Gauth. Cretaceous Baluchistan (Vredenburg, 1908: 175).
- Orthopsis* Cotteau. Cretaceous Karakoram (Steffani, 1928: 172); South India (Stoliczka, 1873: 116); Narbada (Bose, 1884: 40; Duncan, 1887a: 85; Duncan, 1887b: 153; Fourtau, 1918: 44).
- orthopsis* sp. Cretaceous Karakoram (Steffani, 1928: 172).
- ottakovicensis* *Gongrochanus* Badve and Aziz. See *herschelianus* *Gongrochanus* (Mc' Clelland).
- ovalis* *Plesiolampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 58, Pl. 14, figs. 4 – 18; GSI Type Nos. **2547** - **2554**); Salt Range (Davies, 1943: 69).
- cf. *ovatus* *Conocyclus* Orbigny d'. Cretaceous Assam (Medlicott, 1869: 182).
- oviformis* *Prenaster* Duncan and Sladen. See *oviformis* *Prenaster* (*Prenaster*) (Duncan and Sladen).
- oviformis* *Prenaster* (*Prenaster*) (Duncan and Sladen). Eocene Sind (Duncan and Sladen, 1882 – 1886: 90, Pl. 19, figs. 1 – 6; GSI Type Nos. **2572** (Lectotype, SD Srivastava, 2004) - **2573**; Srivastava, 2004: 144, pl. 5, figs. 8 - 9).
- ovulum* *Fibularia* Lamarck. Miocene Kathiawar (Jain, 2002: 124, Pl. 5, figs. 5 – 6; Pl. 7, fig. 2; GSI TYPE Nos. **20766**).
- Paralampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 73).
- patellaeformis* *Amblypygus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 144, Pl. 27, figs. 1 – 3; GSI Type No. **2620**).
- patellaris* *Eupatagus* Archiac d'. See *patellaris* *Eupatagus* (*Eupatagus*) (Archiac and Haime).
- patellaris* *Eupatagus* (*Eupatagus*) (Archiac and Haime). Eocene Sind (Archiac and Haime, 1853: 217, Pl. 15, figs. 6a – c); Kachchh (Wynne, 1872: 246); Miocene Kachchh and Kathiawar (Duncan and Sladen, 1883: 70, Pl. 12, figs. 3 – 5; GSI Type No. **2868** (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 146, pl. 6, figs. 7 - 8).
- patellaris* *Euspatangus* Archiac and Haime. See *patellaris* *Eupatagus* (*Eupatagus*) (Archiac and Haime).
- paucituberculata* *Protechinus* Noetling. Cretaceous Baluchistan (Noetling, 1894: 126 nn; Noetling, 1897: 26, Pl. 2, figs. 3 – 3A; GSI Type No. **3098**; Pl. 3, figs. 1 – 1a; GSI TYPE Nos. **2971** - **2972**).
- pelviformis* *Clypeaster* Duncan and Sladen. Miocene Sind (Duncan and Sladen, 1882 – 1886: 324, Pl. 50, figs. 7 – 9; GSI Type Nos. **2765**

- 2766); Kathiawar (Jain, 2002: 119 - 120, Pl. 4, figs. 4 - 7; GSI TYPE Nos. 20754 - 20755).
- pentagonalis Amblypygus* Duncan and Sladen. Eocene Kachchh (Duncan and Sladen, 1883: 18, Pl. 4, figs. 4 - 11; GSI Type Nos. 2828 - 2829; Srivastava and Singh, 2001: 30 - 32, Pl. 2, figs. 1 - 3; Pl. 4, figs. 1 - 7; Srivastava, 2009: 46-56, fig. 2a-f, Specimen No. \*LUGD/I/2029 {\*Lucknow University Geology Department}.
- pentagonelis Limpasiaster* Aziz and Badve. Cretaceous South India (Aziz and Badve, 2001: 52, Pl. 3, figs. 4 - 6; Holotype No. MACS - G - 2059).
- Peripneustes* Cotteau. See *Meoma (Schizobrissus)* Gray.
- peripneustes* sp. See *Meoma (Schizobrissus)* sp.
- Phyllacanthus* Brandt. Eocene Sind (Duncan and Sladen, 1882 - 1886: 27).
- spines of *Phyllacanthus*. Eocene Sind (Duncan and Sladen, 1882 - 1886: 27, Pl. 14, figs. 15 - 22; GSI Type Nos. 2527- 2536).
- phyllacanthus* sp. Eocene Sind (Duncan and Sladen, 1882 - 1886: 28, Pl. 5, figs. 4 - 5; GSI Type No. 2493).
- Phylloclypeus* de Loriol. Eocene Sind (Duncan and Sladen, 1882 - 1886: 54).
- phylloclypeus* sp. Eocene Sind (Duncan and Sladen, 1882 - 1886: 54, Pl. 12, fig. 8; GSI Type No. 2540).
- Phymosoma* Archiac and Haime. Cretaceous Narbada (Chiplonkar and Badve, 1972: 140); Eocene Sind (Archiac and Haime, 1853: 179).
- pileus Paralampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 73, Pl. 15, figs. 11 - 14; GSI Type No. 2559).
- piligrimi Conoclypeus* Davies. Eocene Kohat (Davies, 1926: 359, Pl. 25, figs. 1 - 6, Pl. 26, figs. 1 - 2; Davies, 1943: 67, Pl. 12, fig. 1).
- pinguis Conoclypeus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 126, Pl. 23, figs. 7 - 11; GSI Type No. 2597).
- pipurensis Echinolampas* Srivastava and Singh. Eocene Kachchh (Srivastava and Singh, 1999: 28 - 29, Pl. 3, figs. 1 - 3).
- placenta Echinodiscus* Duncan and Sladen. Miocene Sind (Duncan and Sladen, 1882 - 1886: 329, Pl. 51, fig. 7, Pl. 52, figs. 1 - 3 and 8; GSI Type No. 2777).
- placenta Echinolampas* Duncan and Sladen. Oligocene Sind (Duncan and Sladen, 1882 - 1886: 264, Pl. 42, figs. 1 - 3; GSI Type Nos. 2707 - 2708).
- placenta Plesiolampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 54, Pl. 13, figs. 4 - 9, Pl. 14, fig. 1; GSI Type Nos. 2542 - 2544); Kohat (Davies, 1943: 69).
- placentula Echinoconus* Stoliczka. Cretaceous South India (Stoliczka, 1873(b): 106, Pl. 16, fig. 4; GSI Type No. 1680).
- planatus Cassidulus* (Forbes). See *planatus Progongrochanus* (Forbes).
- planatus Nucleolites* (*Pygorhynchus*) (Forbes). Cretaceous South India (Forbes, 1845: 162, Pl. 19, figs. 3a - b).
- planatus Progongrochanus* (Forbes). Cretaceous South India (Stoliczka, 1873(b): 103, Pl. 16, figs. 1a - c; GSI Type No. 1677; Aziz and Badve, 2001: 47).
- Plesiolampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 10); Salt Range (Davies, 1943: 69).
- Polycyphus*. Cretaceous Karakoram (Steffani, 1928: 169).
- Polydiadema* Lambert. Cretaceous Narbada (Chiplonkar and Badve, 1972: 139 - 140).
- polygonalis Plesiolampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 61, Pl. 13, figs. 10 - 11; GSI Type No. 2545).
- polymorpha Echinocyamus* (Duncan and Sladen). Eocene Sind (Duncan and Sladen, 1882 - 1886: 137, Pl. 35, figs. 1 - 13; GSI Type Nos. 2601 - 2608); Oligocene Kachchh (Srivastava, 1978: 421 - 423, Pl. 1, figs. 1 - 5); Miocene Kathiawar (Srivastava *et al.*, 2009: 101, Pl. 1, figs. 4 - 6; GSI TYPE No. 21429).
- polymorpha Echinocyamus* var. *sufflata* (Duncan and Sladen). Eocene Kachchh (Duncan and Sladen, 1883: 91).
- polymorpha Sismondia* Duncan and Sladen. See *polymorpha Echinocyamus* (Duncan and Sladen).
- polymorpha* var. *sufflata Sismondia* Duncan and Sladen. See *polymorpha Echinocyamus* var. *sufflata* (Duncan and Sladen).
- Porocidaris* Desor. Eocene Sind (Duncan and Sladen, 1882 - 1886: 113).
- spines of *Porocidaris*. Eocene Sind (Duncan and Sladen, 1882 - 1886: 113, Pl. 10, figs. 12 - 13; GSI Type No. 2526).
- praelonga Plesiolampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 56, Pl. 14, figs. 2 - 3; GSI Type No. 2546).
- pratti Coelopleurus* Archiac and Haime. Eocene Kachchh (Wynne, 1872: 246); Oligocene Sind (Archiac and Haime, 1853: 199, Pl. 13, figs. 5a - b; Duncan and Sladen, 1882 - 1886: 254, Pl. 39, figs. 9 - 12; GSI Type Nos. 2695 - 2697).
- Prenaster* Desor. See *Prenaster (Prenaster)* Desor.
- Prenaster* (*Prenaster*) Desor. Eocene Sind (Duncan and Sladen, 1882 - 1886: 90; Srivastava, 2004: 144).
- primaeva Moira* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 225, Pl. 35, figs. 1 - 3; GSI Type No. 2660).
- Prinocidaris* Agassiz. Eocene Sind (Duncan and Sladen, 1882 - 1886: 109); Kohat (Davies, 1943: 66); Miocene Kathiawar (Jain, 2002: 110).
- prinsepina Cyrtoma* Mc' Clelland. See *herschelianus Gongrochanus* (Mc' Clelland).
- proavia Hipponeo* Duncan and Sladen. Miocene Sind (Duncan and Sladen, 1882 - 1886: 310, Pls. 48 - 49, fig. 1; GSI Type Nos. 2757, 2758).
- profundus Clypeaster* Oligocene Sind (Blanford, 1879: 52); Miocene Sind (Duncan and Sladen, 1882 - 1886: 319, Pl. 50, figs. 1 - 4; GSI Type No. 2763); Kathiawar (Jain, 2002: 120 - 122, Pl. 4, figs. 8 - 11; GSI TYPE Nos. 20757 - 20759).
- profundus Echinanthus* Archiac and Haime. Eocene Kachchh (Wynne, 1872: 250); Miocene Sind (Archiac and Haime, 1853: 207, Pl. 13, figs. 14a - b).
- Progonechinus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 43).
- Progongrochanus* Aziz and Badve. Cretaceous South India (Aziz and Badve, 2001: 45).
- Proisaster* Aziz and Badve. Cretaceous South India (Aziz and Badve, 2001: 57).
- Protechinus* Noetling. Cretaceous Baluchistan (Noetling, 1894: 126; Noetling, 1897: 26; Vredenburg, 1911: 46).
- Protechinus* sp. Cretaceous Baluchistan (Vredenburg, 1911: 46).
- Pseudocidaris* Etallon. Jurassic Kachchh (Gregory, 1893: 3); Cretaceous Karakoram (Steffani, 1928: 161).
- spines of *Pseudocidaris*. Jurassic Kachchh (Gregory, 1893: 3, Pl. 1, figs. 3 - 6; GSI Type Nos. 6736 - 6739).
- Pseudodiadema* Desor. Jurassic Kachchh (Gregory, 1893: 5); Cretaceous South India (Stoliczka, 1873: 114).
- Pseudodiadema* sp. Jurassic Kachchh (Gregory, 1893: 7); Cretaceous South India (Stoliczka, 1873: 114, Pl. 16, fig. 9; GSI Type No. 1685).
- (?) *Pseudodiadema* sp. Cretaceous South India (Stoliczka, 1873: 114, Pl. 17, figs. 1a - b; GSI Type No. 1686).
- pullatus Nucleolites* Stoliczka. Cretaceous South India (Stoliczka, 1873: 104, Pl. 16, figs. 2a - d; GSI Type No. 1678).
- pullus Hemaster* Stoliczka. Cretaceous South India (Stoliczka, 1873(b): 88, Pl. 12, figs. 8 - 9; GSI Type Nos. 1646 - 1647). See *pullus Hemaster* (*Mecaster*) (Stoliczka).
- pullus Hemaster* Stoliczka. Cretaceous South India (Kossmat, 1897: 95, Pl. 10, figs. 6a - d; GSI Type No. 6563). See *pullus Opissaster* (Stoliczka).
- pullus Hemaster* (*Mecaster*) (Stoliczka). Cretaceous South India (Stoliczka, 1873(b): 88, Pl. 12, figs. 8 - 9; GSI Type Nos. 1646 (Lectotype, SD Srivastava, 2004) - 1647; Srivastava, 2004: 141, pl. 1, figs. 1 - 2).
- pullus Opissaster* (Stoliczka). Cretaceous South India (Kossmat, 1897: 95, Pl. 10, figs. 6a - d; GSI Type No. 6563 (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 143, pl. 3, figs. 6 - 8).
- pulvinatus Clypeaster* Duncan and Sladen. Miocene Sind (Duncan and Sladen, 1882 - 1886: 322, Pl. 50, figs. 5 - 6; GSI Type No. 2764); Kathiawar (Jain, 2002: 122, Pl. 4, figs. 12 - 15; GSI TYPE Nos. 20760 - 20761).
- pulvinatus Conoclypeus*. Eocene Sind (Blanford, 1876: 13; Blanford,

- 1879: 48).
- pulvinatus* *Galerites* Sowerby. Eocene Kachchh (Grant, 1837: 327, Pl. 24, fig. 19).
- pumilus* *Echinanthus* Duncan and Sladen. Cretaceous Sind (Duncan and Sladen, 1882 – 1886: 13, Pl. 2, figs. 1- 9; Pl. 3, figs. 1- 7; GSI Type Nos. **2484 - 2490**).
- pusilla* *Pygopyrina* Steffani. Cretaceous Karakoram (Steffani, 1928: 173, Pl. 20, figs. 8a – e).
- pygmæus* *Rhynchopygus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 68, Pl. 15; GSI Type Nos. **2556 and 187**; Pl. 32, figs. 7 – 16; GSI Type Nos. **2650 - 2653**).
- Pygopyrina*. Cretaceous Karakoram (Steffani, 1928: 173).
- Pygorythis* Pomel. Jurassic Kachchh (Gregory, 1893: 11).
- pyrenaicus* *Hemipneustes* Hebert. Cretaceous Baluchistan (Noetling, 1897: 29, Pl. 6, figs. 2 – 2b, 3 - 3a, 4 - 4a; Pl. 7, figs. 1 – 1a; GSI TYPE Nos. **2989 - 2992**).
- Pyrina* Desmoul. Cretaceous Assam (Das Gupta, 1920: 297; Das Gupta, 1929: 26); Baluchistan (Noetling, 1894: 126; Noetling, 1897: 19; Vredenburg, 1908: 175; Hayden, 1914: 14).
- quadralis* *Limpaster* Aziz and Badve. Cretaceous South India (Aziz and Badve, 2001: 51, Pl. 3, figs. 1 - 3; Holotype No. MACS - G - **2009**).
- radakensis* *Echinolampas* Duncan and Sladen. Oligocene Sind (Duncan and Sladen, 1882 – 1886: 260, Pl. 40, fig. 10; GSI Type No. **2703**).
- rajasthanensis* (*Eupatagus*) *Eupatagus* Srivastava and Singh. Eocene Rajasthan (Srivastava and Singh, 2008: 83-91, fig. 2. a-g, Specimen Nos. 7097/\*BSIP/39528[Holotype], 7097/BSIP/39529 to 7097/BSIP/39547 [Paratypes])\*Birbal Shani Institute of Palaeobotany, Lucknow.
- rajasthanensis* *Hyselaster* Srivastava and Kulshreshtha. Eocene Rajasthan (Srivastava and Kulshreshtha, 2009: 229-232, Pl. 1, figs. 1-8, Holotype- GSI Type No. 21442 and Paratype No. 21443).
- rajnathi* *Echinobrissus* Chiplonkar. See *rajnathi* *Nucleolites* (Chiplonkar).
- rajnathi* *Nucleolites* (Chiplonkar). Cretaceous Narbada (Chiplonkar, 1939: 238, Pl. 25, fig. 2; Chiplonkar and Badve, 1972: 143, Pl. 11, figs. 11 – 12; Pl. 12, fig. 18).
- rana* *Brissus* Forbes. Cretaceous South India (Forbes, 1845: 161, Pl. 19, fig. 5).
- rana* *Hemiaster* (Forbes). See *rana* *Hemiaster* (*Hemiaster*) (Forbes).
- rana* *Hemiaster* (*Hemiaster*) (Forbes). Cretaceous South India (Stoliczka, 1873(b): 85, Pl. 12, figs. 4 – 5; GSI Type Nos. **1642** (Lectotype, SD Srivastava, 2004) – **1643**; Srivastava, 2004: 135, pl. 4, fig. 10).
- ranikoti* *Phyllacanthus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 27, Pl. 5, figs. 9 – 10; GSI Type No. **2495**).
- ranjipurensis* *Mareta* Jain. Miocene Kathiawar (Jain, 2002: 130 - 132, Pl. 6, figs. 11 – 14; GSI TYPE Nos. **20790 - 20794**).
- raoi* *Echinocymus* Srivastava. Oligocene Kachchh (Srivastava, 1978: 424 – 426, Pl. 1, figs. 8 – 9); Miocene Kathiawar (Srivastava et al., 2009: 101, Pl. 1, figs. 7 – 9; GSI TYPE No. **21432, 21433**).
- rarus* *Hemiaster* (*Mecaster*) Chiplonkar and Badve. Cretaceous Narbada (Chiplonkar and Badve, 1972: 146 – 147, Pl. 12, figs. 2 and 6).
- Recrosalenia* Currie. Jurassic Rajasthan (Sahni and Bhatnagar, 1958: 431; Bhatia, 1980: 40).
- regularis* *Cardiaster* Stoliczka. Cretaceous South India (Stoliczka, 1873: 93, Pl. 14, figs. 3 – 4; GSI Type Nos. **1658 - 1659**).
- regularis* *Grammechinus* Duncan and Sladen. Miocene Kathiawar (Duncan and Sladen, 1883: 82, Pl. 13, figs. 7 – 8; GSI Type No. **2880**; Jain, 2002: 114, Pl. 2, figs. 1 – 3; GSI TYPE Nos. **20730 - 20732**).
- reticulatus* *Arachniopleurus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 42, Pl. 9, figs. 6 – 8; GSI Type No. **2508**).
- reticulatus* var. *Arachniopleurus* Duncan and Sladen. Eocene Kachchh (Duncan and Sladen, 1883: 11, Pl. 11, fig. 6).
- Rhabdocidaris* Desor. Jurassic Kachchh (Gregory, 1893: 3).
- Rhabdocidaris* sp. Jurassic Kachchh (Gregory, 1893: 3, Pl. 1, figs. 1a – b; GSI Type No. **6734**).
- Rhyncholampas* A. Agassiz, 1869. Eocene Meghalaya (Srivastava et al., 2008:514)
- Rhynchopygus* Orbigny. Eocene Sind (Duncan and Sladen, 1882 – 1886: 68).
- rimuensis* *Polycyphus* Steffani. Cretaceous Karakoram (Steffani, 1928: 169, Pl. 19, figs. 3a – g).
- rossica* *Archaeocidaris* von Bush. Permo Carboniferous Karakoram (Terra, de, 1932: 158, Pl. 13, fig. 16).
- rostrata* *Plesiolampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 61, Pl. 13, figs. 1 – 3; GSI Type No. **2541**).
- rostratus* *Conocypterus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 128, Pl. 24, figs. 1 – 4; GSI Type No. **2598**).
- rostratus* *Eupatagus* Archiac. See *rostratus* *Eupatagus* (*Eupatagus*) (Archiac).
- rostratus* *Eupatagus* (*Eupatagus*) (Archiac). Oligocene Kachchh (Duncan and Sladen, 1883: 47, Pl. 7, figs. 1 – 8; GSI Type Nos. **2688, 2712 and 2894**; Srivastava, 1981: 39, Pl. 1, figs. 1 - 4); Eocene and Oligocene Sind (Duncan and Sladen, 1882 – 1886: 240, Pl. 38, figs. 15 - 18, 267, Pl. 43, fig. 6; GSI Type Nos. **2837** (Lectotype, SD Srivastava, 2004) – **2839**; Srivastava, 2004: 146 - 147, pl. 7, fig. 8); Oligocene Sind (Blanford, 1876: 14; Blanford, 1879: 52); Miocene Kachchh (Srivastava, 1981: 39).
- cf. *rostratus* *Eupatagus* Archiac. See cf. *rostratus* *Eupatagus* (*Eupatagus*) (Archiac).
- cf. *rostratus* *Eupatagus* (*Eupatagus*) (Archiac). Eocene Sind (Archiac and Haime, 1853: 218, Pl. 15, figs. 3a – b).
- rostratus* *Euspatangus* Archiac. See *rostratus* *Eupatagus* (*Eupatagus*) (Archiac).
- aff. *rostratus* *Euspatangus* Archiac. See aff. *rostratus* *Eupatagus* (*Eupatagus*) (Archiac).
- aff. *rostratus* *Eupatagus* (*Eupatagus*) (Archiac). Eocene Assam (Spengler, 1923: 71, Pl. 4, figs. 12a – d).
- rotunda* *Echinolampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 152, Pl. 28, figs. 1 – 6; GSI Type No. **2623**).
- rotundus* *Echinocymus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 135, Pl. 25, figs. 33 – 37; GSI Type No. **2614**).
- rotundus* *Macropneustes* Duncan and Sladen. See *rotundus* *Macropneustes* (*Macropneustes*) (Duncan and Sladen).
- rotundus* *Macropneustes* (*Macropneustes*) (Duncan and Sladen). Eocene Sind (Duncan and Sladen, 1882 – 1886: 232, Pl. 38, figs. 6 – 7; GSI Type No. **2685** (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 147, pl. 7, figs. 12 - 13).
- rotundus* *Neocatopygus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 76, Pl. 16, figs. 1 – 10; GSI Type Nos. **2560 - 2562**).
- rousseau* *Temnechinus* Archiac and Haime. See *rousseau* *Opechinus* (Archiac and Haime).
- rousseau* *Temnopleurus* Archiac and Haime. See *rousseau* *Opechinus* (Archiac and Haime).
- rousseau* *Opechinus* (Archiac and Haime). Eocene – Miocene Sind (Duncan and Sladen, 1882 – 1886: 122, 303, Pl. 22, figs. 13 – 14 and Pl. 47, figs. 3 – 4; GSI Type No. **2595**); Miocene Sind (Archiac and Haime, 1853: 205, Pl. 13, figs. 10a – c); Kachchh and Kathiawar (Duncan and Sladen, 1883: 57, 84, Pl. 11, figs. 7 – 11; GSI Type Nos. **2753, 2865** and Pl. 13, figs. 13 – 15; GSI Type Nos. **2883 - 2884**); Kathiawar (Jain, 2002: 115, Pl. 3, figs. 1 - 2; GSI TYPE Nos. **20740 - 41**).
- saadensis* *Hemiaster* (*Mecaster*) Peron and Gauthier. Cretaceous Narbada (Chiplonkar, 1939: 242).
- Salenia* Gray. Jurassic Spiti (Blanford, 1863: 137); Cretaceous Narbada (Duncan, 1887a: 90; Fourtau, 1918: 38; Chiplonkar, 1937: 61; Chiplonkar and Badve, 1972: 138); South India (Stoliczka, 1873: 109); Eocene Kachchh (Srivastava, 1982: 23 – 25).
- (?) *Salenia* sp. Jurassic Spiti (Blanford, 1863: 137, Pl. 4, fig. 9).
- Salenidia* Pomel. Eocene Sind (Duncan and Sladen, 1882 – 1886: 29).
- Salmacis* Agassiz. Pliocene Makran (Duncan and Sladen, 1882 – 1886: 374).
- Salmacis* sp. Pliocene Makran (Duncan and Sladen, 1882 – 1886: 374, Pl. 56, fig. 4; GSI Type No. **2803**).

- sarthicensis* *Holectypus* Cotteau. Jurassic Kachchh (Gregory, 1893: 7).  
*sceptifera* *Cidaris* Mantell. Cretaceous South India (Stoliczka, 1873: 120, Pl. 17, figs. 31 – 36; GSI Type Nos. **1715 – 1720**).  
*Schizaster* Agassiz. Eocene Sind (Archiac and Haime, 1853: 222); Baluchistan (Ball, 1874: 152); Oligocene Sind (Blanford, 1876: 14; Blanford, 1879: 125); Pliocene Makran (Pilgrim, 1908: 42).  
*Schizaster* sp. Srivastava *et al.* Lower to Middle Miocene Mizoram (Srivastava *et al.*, 2008(b): 222, Pl. I, figs. d-h; six specimens (Type Nos. MZ/E/9, 11, 12, 13, 14 and 15))  
*Schizaster* sp. See *Schizaster* (*Schizaster*) sp.  
(?) *Schizaster* sp. Eocene Sind (Duncan and Sladen, 1882 – 1886: 224, Pl. 36, figs. 20 – 21; GSI Type No. **2677**).  
*Schizaster* (*Paraster*) Pomel. Eocene Sind (Archiac and Haime, 1853: 221; Duncan and Sladen, 1882 – 1886: 224); Kachchh (Duncan and Sladen, 1883: 38).  
*Schizaster* (*Schizaster*) Agassiz. Eocene Sind (Archiac and Haime, 1853: 87; Duncan and Sladen, 1882 – 1886: 280; Srivastava, 2004: 144); Kohat (Davies, 1943: 70); Assam (Spengler, 1923: 72); Kachchh (Duncan and Sladen, 1883: 20; Srivastava, 2004: 144); Oligocene – Miocene Sind (Duncan and Sladen, 1882 – 1886: 339; Srivastava, 2004: 144); Miocene Kachchh (Duncan and Sladen, 1883: 70); Kathiawar (Jain, 2002: 127).  
*Schizaster* (*Schizaster*) sp. Eocene Kohat (Davies, 1943: 70, Pl. 12, figs. 5 - 7); Assam (Spengler, 1923: 72, Pl. 4, figs. 11 a, b).  
*Schizobrissus* (Duncan and Sladen). Eocene Kachchh (Srivastava and McNamara, 2010: 4)  
*scutiformis* *Brissopsis* Archiac (?). Eocene Sind (Archiac and Haime, 1853: 219, Pl. 15, figs. 5a - b).  
aff. *scutiformis* *Clypeaster* Lambert. Pliocene Makran (Pilgrim, 1908: 41).  
*scutiformis* *Metalia* Archiac. Eocene Sind (Duncan and Sladen, 1882 – 1886: 209, Pl. 36, figs. 1 – 5; GSI Type Nos. **2669 – 2670**).  
*scutiformis* (?) var. *rotunda* *Metalia* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 211, Pl. 36, figs. 6 – 7; GSI Type No. **2671**).  
*semireticulatus* *Arachniopleurus* Duncan and Sladen. Eocene Baluchistan (Vredenburg, 1901: 264).  
*sexangulatus* *Hemaster* (Orbigny d'). Cretaceous South India (Stoliczka, 1873: 88, Pl. 13, fig. 6; GSI Type No. **1653**).  
*sexangulatus* *Micraster* Orbigny d'. Cretaceous South India (Orbigny d', 1847: Pl. 8, figs. 47 – 49).  
*similaris* *Hemaster* Stoliczka. See *similaris* *Hemaster* (*Hemaster*) (Stoliczka).  
*similaris* *Hemaster* (*Hemaster*) (Stoliczka). Cretaceous South India (Stoliczka, 1873(b): 80, Pl. 11, figs. 1a – b; GSI Type No. **1628** (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 135 – 137, pl. 1, figs. 6 – 8).  
*similis* *Echinobrissus* Orbigny d'. Cretaceous Narbada (Duncan, 1865: 353).  
*similis* *Hemaster* Orbigny d'. See *similis* *Opissaster* (Orbigny d').  
*similis* *Opissaster* (Orbigny d'). Cretaceous Narbada (Duncan, 1865: 355; Duncan, 1887a: 92).  
*similis* *Nucleolites* Orbigny d'. Cretaceous Narbada (Duncan, 1887a: 81; GSI Type No. **4305**).  
*similis* *Orthopsis* Stoliczka. Cretaceous South India (Stoliczka, 1873: 116, Pl. 17, fig. 2; GSI Type No. **1687**); Narbada (Bose, 1884: 40).  
*simplex* *Clypeaster* Duncan and Sladen. Oligocene Sind (Duncan and Sladen, 1882 – 1886: 257, Pl. 40, figs. 1 – 2; GSI Type No. **2699**).  
*simplex* *Tennopleurus* Duncan and Sladen. Pliocene Makran (Duncan and Sladen, 1882 – 1886: 375, Pl. 56, figs. 5 – 7; GSI Type No. **2804**).  
*simulans* *Schizaster* Duncan and Sladen. See *simulans* *Schizaster* (*Schizaster*) (Duncan and Sladen).  
*simulans* *Schizaster* (*Schizaster*) (Duncan and Sladen). Eocene Sind (Duncan and Sladen, 1882 – 1886: 223, Pl. 34, figs. 15 – 16; GSI Type No. **2658** (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 145, pl. 5, fig. 10); Kohat (Davies, 1943: 70, Pl. 12, figs. 8 – 9).  
*sindensis* *Brissopatagus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 226, Pl. 38, figs. 19 – 21; GSI Type No. **2689**).  
*sindensis* *Coelopleurus* Duncan and Sladen. Miocene Sind (Duncan and Sladen, 1882 – 1886: 298, Pl. 36, figs. 3, 5 – 6, 8 and 10, Pl. 47, figs. 1 – 2; GSI Type Nos. **2746, 2748 – 2750** and **2752**); Kathiawar (Jain, 2002: 112, Pl. 2, figs. 4 – 6; GSI TYPE No. **20729**).  
*sindensis* *Conoclypeus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 51, Pl. 12, figs. 1 – 4; GSI Type No. **2537**).  
*sindensis* *Echinolampas* Archiac d'. Eocene Sind (Archiac and Haime, 1853: 210, Pl. 14, figs. 2a – b; Duncan and Sladen, 1882 – 1886: 159, Pl. 21, figs. 1 – 10; GSI Type Nos. **2626 – 2629**).  
*sindensis* var. *hemisphaerica* *Echinolampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 163, Pl. 29, figs. 11 – 17; GSI Type Nos. **2630 – 2633**).  
*sindensis* *Ilaronia* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 179, Pl. 32, figs. 9 – 18; GSI Type Nos. **2644 – 2646**).  
*sindensis* *Linthia* Duncan and Sladen. Cretaceous Sind (Duncan and Sladen, 1882 – 1886: 18, Pl. 4; GSI Type No. **2491**).  
*sindensis* *Phyllacanthus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 – 1886: 27, Pl. 5, figs. 11 – 12; GSI Type No. **2496**).  
*singhi* *Eupatagus* (*Eupatagus*) Srivastava. Oligocene – Miocene Kachchh (Srivastava, 1981: 39 – 40, Pl. 1, figs. 5 – 8).  
*Sismondia* Desor. See *Echinocyamus* Van Phelsum.  
*smithi* *Rhyncholampas* Srivastava *et al.* Eocene Meghalaya (Srivastava *et al.*, 2008(d): 514, Pl.II, figs. 1-8, Pl. III, figs. 5-8; Holotype No. LUGD/I/**2023**)  
*sowerbyi* *Brissopsis* (Archiac d') (Duncan and Sladen). Eocene Sind (Duncan and Sladen, 1882 – 1886: 93, 206, Pl. 35, figs. 10 – 16; GSI Type Nos. **2664 – 2665** and **2888**); Kohat (Davies, 1943: 71, Pl. 12, fig. 4, Pl. 13, figs. 3 – 5); Baluchistan (Ball, 1874: 152).  
*sowerbyi* *Brissopsis* Archiac d' (?). Eocene Sind (Archiac and Haime, 1853: 220, Pl. 15, figs. 7a – b).  
*sowerbyi* *Clypeaster* Duncan and Sladen. Oligocene Kachchh (Duncan and Sladen, 1883: 49, Pl. 12, fig. 11; GSI Type No. **2873**).  
*sowerbyi* *Metalia* (Archiac d') Duncan and Sladen. See *sowerbyi* *Brissopsis* (Archiac d') (Duncan and Sladen).  
*Spatangus*. Cretaceous South India (Kaye, 1840: 40); Eocene Kachchh (Grant, 1837: 327).  
(?) *Spatangus* sp. Cretaceous South India (Kaye, 1840: 40).  
*speciale* *Cyphosoma* Cott. and Gauth. Cretaceous Baluchistan (Vredenburg, 1908: 175).  
*speciosus* *Macropneustes* Duncan and Sladen. See *speciosus* *Macropneustes* (*Macropneustes*) (Duncan and Sladen).  
*speciosus* *Macropneustes* (*Macropneustes*) (Duncan and Sladen). Eocene Sind (Duncan and Sladen, 1882 – 1886: 229, Pl. 38, figs. 1 – 5; GSI Type No. **2684** (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 148, pl. 7, figs. 5 – 7).  
*sphaeroidalis* *Echinolampas* Archiac d'. Eocene Sind (Archiac and Haime, 1853: 210, Pl. 14, figs. 6a – b); Assam (Medlicott, 1869: 167); Miocene Kachchh (Duncan and Sladen, 1883: 64, Pl. 12, fig. 6; GSI Type No. **2869**; Srivastava and Singh, 1999: 34, Pl. 9, figs. 3 – 4); Sind (Blanford, 1879: 57).  
(?) *sphaeroidalis* *Echinolampas* Archiac d'. Miocene Sind (Duncan and Sladen, 1882 – 1886: 338, Pl. 53, figs. 15 – 19; GSI Type Nos. **2787 – 2789**).  
*sphaerooides* *Micropedina* Stoliczka. Cretaceous South India (Stoliczka, 1873: Pl. 16, fig. 7; GSI Type No. **1683**).  
*stellulatus* *Tennechinus* Duncan and Sladen. Miocene Sind (Duncan and Sladen, 1882 – 1886: 304, Pl. 47, figs. 8 – 9; GSI Type No. **2755**).  
*Stigmatopygus* Orbigny d'. See *Gongrochanus* Kier, 1962  
*stoliczkai* *Gongrochanus* Badve and Aziz. See *herschelianus* *Gongrochanus* (Me' Clelland).  
*stoliczkai* *Hemaster* Steffani. Cretaceous Karakoram (Steffani, 1928: 179, Pl. 21, figs. 2a – d and 3a – d).  
*Stomechinus* Desor. Jurassic Kachchh (Gregory, 1893: 7).  
*Stomechinus* sp. Jurassic Kachchh (Gregory, 1893: 7, Pl. 2, fig. 3; GSI Type No. **6742**).

- stracheyi* *Echinus* Archiac and Haime. Miocene Sind (Archiac and Haime, 1853: 201, Pl. 13, figs. 12a – b).
- subangulatum* *Pseudodiadema* Stoliczka. Cretaceous South India (Stoliczka, 1873: 114, Pl. 16, fig. 8; GSI Type No. **1684**).
- subconica* *Echinolampas* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 155, Pl. 28, figs. 7 – 11; GSI Type No. **2624**).
- subcrenatus* *Echinus* Duncan. Miocene Sind (Duncan and Sladen, 1882 - 1886: 317, Pl. 49, figs. 5 – 6; GSI Type No. **2761**).
- subinvaginatus* *Cassidulus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 182, Pl. 33, figs. 17 – 20; GSI Type No. **2654**).
- subquadratus* *Echinobrissus* Orbigny d'. Cretaceous Narbada (Duncan, 1865: 356).
- subrotundus* *Amblypygus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 140, Pl. 26, figs. 1 – 13; GSI Type Nos. **2615** - **2618**); Kohat (Davies, 1943: 68).
- subrotundus* var. *conicus* *Amblypygus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 142, Pl. 26, fig. 14; GSI Type No. **2619**).
- subsimilis* *Echinolampas* Archiac d'. Eocene Sind and Kachchh (Archiac and Haime, 1853: 212).
- subsimilis* *Hemiaster* (*Malwaster*) (Chiplonkar and Badve). Cretaceous Narbada (Fourtau, 1918: 50, Pl. 2, fig. 5; GSI Type No. **11950** (Lectotype, SD Srivastava, 2004); Chiplonkar and Badve, 1972: 145 – 146, Pl. 12, figs. 11 and 15; Srivastava, 2004: 139, pl. 3, figs. 1 - 2).
- subsimilis* *Opissaster* Fourtau. See *subsimilis Hemiaster* (*Malwaster*) (Chiplonkar and Badve).
- subvesiculosa* *Cidaris* Orbigny d'. Cretaceous South India (Stoliczka, 1873: 119, Pl. 18, figs. 25 – 28; GSI Type Nos. **1710** - **1712**).
- cf. *subvesiculosa* *Cidaris* Orbigny d'. Cretaceous South India (Stoliczka, 1873: 119, Pl. 17, figs. 17 – 20; GSI Type Nos. **1702** - **1705**).
- suffarcinatus* *Clypeaster* Duncan and Sladen. Pliocene Makran (Duncan and Sladen, 1882 - 1886: 376, Pl. 58, figs. 1 – 5; GSI Type No. **2813**).
- sufflatus* *Briassopsis* Duncan and Sladen. See *sufflatus Eupatagus* (*Eupatagus*) (Duncan and Sladen).
- sufflatus* *Eupatagus* (*Eupatagus*) (Duncan and Sladen). Eocene Sind (Duncan and Sladen, 1882 - 1886: 203, Pl. 35, figs. 17 – 24; GSI Type Nos. **2666** (Lectotype, SD Srivastava, 2004) - **2667**; Srivastava, 2004: 147, pl. 6, figs. 1 - 4); Kohat (Davies, 1943: 72, Pl. 12, figs. 2 - 3, Pl. 13, figs. 1 – 2 and 6).
- sufflatus* *Schizaster* Duncan and Sladen. See *sufflatus Schizaster* (*Paraster*) Duncan and Sladen.
- sufflatus* *Schizaster* (*Paraster*) Duncan and Sladen. Miocene Sind (Duncan and Sladen, 1882 - 1886: 339, Pl. 49, figs. 7 – 9; GSI Type No. **2762** (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 144, pl. 4, fig. 11; pl. 5, fig. 11).
- sulcatus* *Catopygus* Stoliczka. Cretaceous South India (Stoliczka, 1873: 96, Pl. 14, figs. 6 – 7; GSI Type Nos. **1661** - **1662**).
- soleimanai* *Cidaris* Noetling. Cretaceous Baluchistan (Noetling, 1894; 126 mn; Noetling, 1897: 11, Pl. 2, figs. 1 – 1c; GSI Type No. **2969**).
- symmetricus* *Opissaster* (Duncan and Sladen). Eocene Sind (Duncan and Sladen, 1882 - 1886: 220, Pl. 37, figs. 15 – 21; GSI Type No. **2683** (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 143, pl. 3, figs. 9 - 10).
- symmetricus* *Schizaster* Duncan and Sladen. See *symmetricus Opissaster* (Duncan and Sladen).
- Tamilampas* Aziz and Badve. Cretaceous South India (Aziz and Badve, 2001: 52).
- tamilnaduensis* *Gongrochanus* Badve and Aziz. See *herschelianus* *Gongrochanus* (Mc' Clelland).
- tamulicus* *Ditremaster* (Kossmat). Cretaceous South India (Kossmat, 1897: 96, Pl. 5, figs. 5a – d; GSI Type No. **6562** (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 131, pl. 4, figs. 3 - 4); Baluchistan (Vredenburg, 1908: 174).
- tamulicus* *Hemiaster* Kossmat. See *tamulicus Ditremaster* (Kossmat).
- tandoni* *Echinolampas* Srivastava and Singh. Oligocene Kachchh (Srivastava and Singh, 1999: 29 – 30, Pl. 5, figs. 1 – 4).
- tandoni* *Eupatagus* (*Gymnopatagus*) Srivastava. Oligocene Kachchh (Srivastava, 1981: 40 – 41, Pl. 1, figs. 9 – 11).
- tandoni* *Salenia* Srivastava. Eocene Kachchh (Srivastava, 1982: 23 – 25, figs 1 – 4).
- Temnechinus* Forbes. Miocene Sind (Duncan and Sladen, 1882 - 1886: 303).
- Temnopleurus* Agassiz. Miocene Sind (Archiac and Haime, 1853: 203); Kachchh (Wynne, 1872: 251); Pliocene Makran (Duncan and Sladen, 1882 - 1886: 375; Pilgrim, 1908: 41).
- testudo* *Cassidulus* (Forbes) ?. See *testudo Progongrochanus* (Forbes). Cretaceous South India (Stoliczka, 1873: 101, Pl. 15, fig. 9; GSI Type No. **1671**).
- testudo* *Nucleolites* (*Pygorhynchus*) (Forbes). Cretaceous South India (Forbes, 1845: 161, Pl. 19, figs. 2a - b).
- testudo* *Progongrochanus* (Forbes). Cretaceous South India (Stoliczka, 1873: 101, Pl. 15, fig. 9; GSI Type No. **1671**; Aziz and Badve, 2001: 49).
- cf. *thomasi* *Hemiaster* Peron and Gauthier. See *chirakhanensis* *Hemiaster* (*Mecaster*) Chiplonkar.
- thomsoni* *Echinometra* Archiac and Haime. Eocene Sind (Archiac and Haime, 1853: 207, Pl. 13, figs. 13a – b).
- toreumaticus* var. *Temnopleurus* Agassiz. Pliocene Makran (Pilgrim, 1908: 41).
- Toxaster Agassiz. Cretaceous South India (Aziz and Badve, 2001: 54).
- Tridium* Tandon and Srivastava. Eocene Kachchh (Tandon and Srivastava, 1980: 1 – 3).
- Troschelia* Duncan and Sladen. See *Hikelaster* Lambert & Thiery.
- tuberculata* *Hikelaster* (Duncan and Sladen). Miocene Kachchh (Duncan and Sladen, 1883: 67, Pl. 7, figs. 9 - 12, Pl. 11, fig. 5; GSI Type Nos. **2840** - **2841** (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 147, pl. 7, figs. 14 - 17).
- tuberculata* *Troschelia* Duncan and Sladen. See *tuberculata Hikelaster* (Duncan and Sladen).
- tuberculosus* *Opechinus* (Archiac and Haime). Eocene Sind (Archiac and Haime, 1853: 206, Pl. 13, figs. 11a – b); Miocene Kathiawar (Duncan and Sladen, 1883: 85, Pl. 13, figs. 16 – 17; GSI Type Nos. **2885**; Jain, 2002: 112, Pl. 2, figs. 4 - 6; GSI TYPE No. **20729**).
- tuberculosus* *Temnechinus* Archiac and Haime. See *tuberculosus Opechinus* (Archiac and Haime).
- tuberculosus* *Temnopleurus* Archiac and Haime. See *tuberculosus Opechinus* (Archiac and Haime).
- tuberosus* *Hemiaster* Stoliczka. See *tuberous Hemiaster* (*Hemiaster*) (Stoliczka).
- 41-50 *tuberosus* *Hemiaster* (*Hemiaster*) (Stoliczka). Cretaceous South India (Stoliczka, 1873(b): 82, Pl. 11, figs. 3 – 6; GSI Type Nos. **1630** (Lectotype, SD Srivastava, 2004) - **1633**; Srivastava, 2004: 137, pl. 2, figs. 5 - 6).
- tumida* *Echinolampas* Duncan and Sladen. Oligocene Sind (Duncan and Sladen, 1882 - 1886: 265, Pl. 43, figs. 1 – 5; GSI Type No. **2711**).
- tumida* var. *Echinolampas* Duncan and Sladen. Oligocene Sind (Duncan and Sladen, 1882 - 1886: 267; GSI Type No. **2891**).
- tumidum* *Laganum* Duncan and Sladen. Pliocene Makran (Duncan and Sladen, 1882 – 1886: 379, Pl. 58, figs. 6 – 10; GSI Type No. **2814**).
- tumidus* *Amblypygus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 265, Pl. 27, figs. 4 – 6; GSI Type No. **2679**).
- tumidus* *Micraster* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 189, Pl. 37, figs. 1 – 6; GSI Type No. **2621**); Kohat (Davies, 1943: 71).
- tumidus* *Tamilampas* Aziz and Badve. Cretaceous South India (Aziz and Badve, 2001: 54, Pl. 3, figs. 7- 8; Holotype No. MACS - G - **2009**).
- tumulus* *Pygorhytis* Gregory. Jurassic Kachchh (Gregory, 1893: 11, Pl. 2, figs. 6a – b, 7a – b; GSI Type Nos. **6745** - **6746**).
- (?) *Typocidaris*. Cretaceous Karakoram (Steffani, 1928: 161).
- (?) *Typocidaris*. sp. Cretaceous Karakoram (Steffani, 1928: 161, Pl. 19, figs. 1a – b).

- undatum Cyphosoma* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 117, Pl. 22, figs. 11 - 12; GSI Type No. 2594).
- unigranulatus Pseudocidaris* Gregory. Jurassic Kachchh (Gregory, 1893: 3, Pl. 1, figs. 2a - g; GSI Type No. 6735).
- valenciennesi Temnopleurus* Archiac d'. Eocene Sind (Archiac and Haime, 1853: 203, Pl. 13, figs. 7a - b).
- varians Clypeaster* Sowerby. Eocene Kachchh (Grant, 1837: 327, Pl. 24, figs. 21 - 21a).
- venustula Micropsis* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 119, Pl. 22, figs. 1 - 7; GSI Type Nos. 2591 - 2592); Baluchistan (Vredenburg, 1901: 261).
- verneuili Cidaris* Archiac d'. Eocene Sind (Archiac and Haime, 1853: 195, Pl. 13, figs. 4a - b; Duncan and Sladen, 1882 - 1886: 26, Pl. 5, figs. 6 - 8; GSI Type No. 2494); Baluchistan (Ball, 1874: 152); Oligocene Sind (Blanford, 1879: 52).
- cf. *vesiculosus Cidaris* Goldfuss. Cretaceous South India (Stoliczka, 1873: 118, Pl. 17, figs. 21 - 24; GSI Type Nos. 1706 - 1709).
- vicaryi Echinolampas* Archiac and Haime. Miocene Sind (Archiac and Haime, 1853: 213, Pl. 14, figs. 4a - b); Kachchh (Duncan and Sladen, 1883: 33; GSI Type No. 2893).
- vicus Hemiaster* Stoliczka. See *vicus Hemiaster (Hemiaster)* (Stoliczka).
- vicus Hemiaster (Hemiaster)* (Stoliczka). Cretaceous South India (Stoliczka, 1873(b): 83, Pl. 12, fig. 1; GSI Type No. 1639 (Lectotype, SD Srivastava, 2004); Srivastava, 2004: 137, pl. 1, figs. 9 - 10).
- vishnu Clypeolampas* Noetling. Cretaceous Baluchistan (Noetling, 1894: 126 nn; Noetling, 1897: 25, Pl. 4, fig. 1 - 1c; GSI Type No. 2988).
- waageni Clypeaster* Duncan and Sladen. Miocene Kachchh (Duncan and Sladen, 1883: 58, Pl. 12, fig. 13; Kathiawar (Jain, 2002: 122 - 123, Pl. 5, figs. 1 - 2; GSI TYPE Nos. 20762 - 20763).
- warthi Conocyclus* Davies. Eocene Kohat (Davies, 1926: 363, Pl. 26, figs. 3 - 6; Davies, 1943: 67).
- wynnei Echinolampas* Duncan and Sladen. Miocene Kachchh (Duncan and Sladen, 1883: 63, Pl. 9, figs. 11 - 12; GSI Type No. 2857).
- zizzac Dictyopleurus* Duncan and Sladen. Eocene Sind (Duncan and Sladen, 1882 - 1886: 38, Pl. 9, figs. 1 - 3; GSI Type No. 2506); Kohat (Davies, 1943: 67).
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## ANNOUNCEMENT

Professor S.N. Bhalla, Ex-Professor and Chairman, Geology Department, Aligarh Muslim University, Aligarh has donated his entire personal library to the Birbal Sahni Institute of Palaeobotany, Lucknow. It comprises finest miropalaeontological literature including 1787 reprints, 97 books, 66 reference work, copies of the proceedings of different international conferences and meetings and, copies of the JGSI. All interested scientists, researchers and students are welcome to consult the literature at BSIP Library.