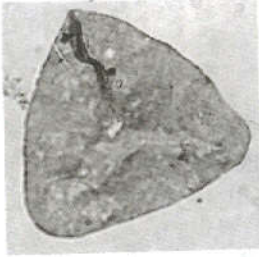


Plate 17

- Fig.1 - *Leiotriletes* sp. (Lower Permian, Kuh-e-Faraghan).
- Fig.2&3 - *Horriditriletes ramosus* (Balme & Hennelly) Bharadwaj & Salujha, 1964 (Lower Permian, Kuh-e-Faraghan).
- Fig.4 - *Kraeuselisporites splendens* (Balme & Hennelly) Segroves, 1970 (lower Permian, Kuh-e-Faraghan).
- Fig.5 - *Kosankeisporites elegans* (Kosanke) Bharadwaj 1962 (Lower Permian, Kuh -e- Faraghan).
- Fig.6 - *Hamiapollenites tractiferinus* (Samoilovich) Hart, 1964 (Lower Permian, Kuh -e- Faraghan).
- Fig.7 - *Nuskosporites triangularis* Potonie & Lele 1959 (Lower Permian, Kuh -e- Faraghan).
- Fig.8 - *Mabuitasaccites ovatus* Bose & Kar, 1966 (Lower Permian, Kuh-e-Faraghan).
- Fig.9 - *Leiosphaeridia* sp. (Devonian, Kuh-e-Ozom).
- Fig.10 - *Protohaploxypinus diagonalis* Balme, 1970 (Lower Permian, Kuh -e- Faraghan).
- Fig.11 - *Platysaccus densus* Kar, 1967 (Lower Permian, Kuh-e-Faraghan).



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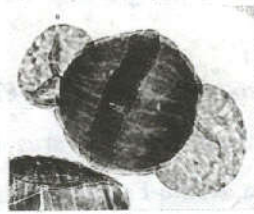
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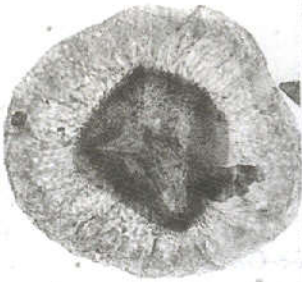
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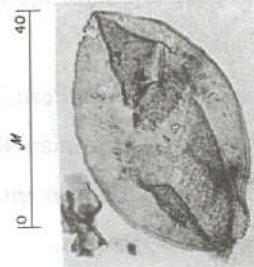
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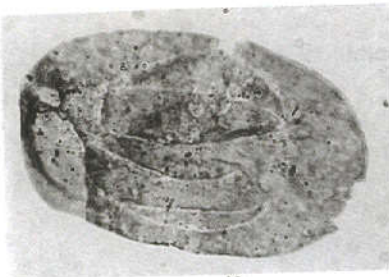
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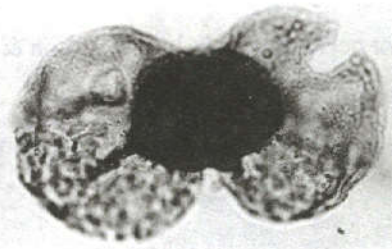
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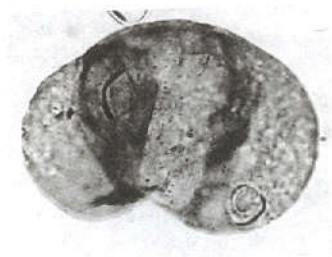
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11

Plate 18

- Fig.1 - *Pityosporites giganteus* Balme & Hennelly, 1965 (Lower Permian, Kuh -e-Faraghan).
- Fig.2 - *Rhizomaspora radiata* Wilson, 1962 (Lower Permian, Kuh-e-Faraghan).
- Fig.3 - *Punctatisporites gretensis* Balme & Hennelly, 1956 (Lower Permian, Kuh -e-Faraghan).
- Fig.4 - *Somphophragma miscellum* Playford, 1981 (Devonian, Kuh-e-Faraghan).
- Fig.5 - *Striatopodocarpites rarus* (Bharadwaj & Salujha) Balme, 1970 (Lower Permian, Kuh-e-Faraghan).
- Fig.6 - *Striomonosaccites ovatus* Bharadwaj, 1962 (Lower Permian, Kuh-e-Faraghan)
- Fig.7 - *Schizaeisporites microrugosus* Tschudy & Kosanke, 1966 (Lower Permian, Kuh-e-Faraghan).
- Fig.8 - *Schizopollis* sp. (Lower Permian, Kuh-e-Faraghan)
- Fig.9 - *Tyligmasoma* sp. (Devonian, Kuh-e-Faraghan).
- Fig.10 - *Tiwariaspis gondwanensis* (Tiwari) Maheshwari & Kar, 1967 (Lower Permian, Kuh-e-Faraghan).
- Fig.11 - *Rugulatisporites iranica* nov. sp. (Upper Devonian, Kuh-e-Ozom).
- Fig.12 - *Potonicisporites neglectus* Potonie & Lele, 1965 (Lower Permian, Kuh -e-Faraghan).
- Fig.13 - *Thyospora perrucosa* (Alpern) Wilson & Bentall, 1944 (Lower Permian, Kuh-e-Faraghan).
- Fig.14 - *Tiwariaspis flavatus* Maheshwari & Kar, 1967 (Lower Permian, Kuh -e-Faraghan).



1



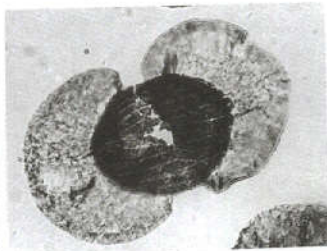
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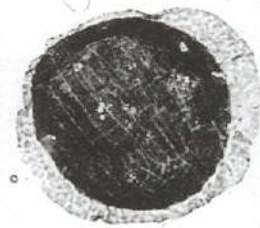
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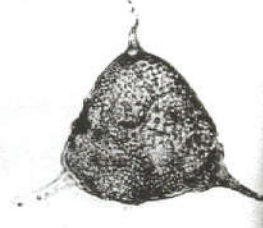
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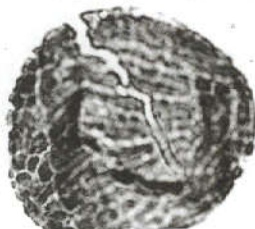
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14



**Alphabetical arrangement and worldwide records
of the encountered Acritarch taxa
Group Acritarcha Evitt, 1963**

**Genus: *Acanthodiacrodium* (Timofeev, 1958),
Deflandre, Evitt & Deflandre-Rigaud, 1962**

***Acanthodiacrodium bicoronatum* Welsch, 1986**

Plate 1, Fig. 1

Remarks: This species is restricted to the Lashkarak formation of the Hassanakdar area. It is close comparable with those recorded from Ilebeck formation at Zard-Kuh area (Ghavidel-syooki 1990), and Upper Cambrian-Tremadocian sediments of Norway (Welsch, 1986).

***Acanthodiacrodium seratum* Timofeev, 1959**

Plate 1, Fig. 2

Remarks: This species appears in the Lashkarak formation. it is comparable to those which has recorded from Tremadocian sediments of Algerian Sahara (Combaz, 1967), and Ilebeck and Zard-Kuh formations of Zagros Basin (Ghavidel-syooki, 1990)

***Acanthodiacrodium spinum* Rasul, 1976**

Palte 1, Fig. 3

Remarks: The species occurs in the Lashkarak formation. So far it has been recorded from Tremadocian sediments of England (Rasul, 1976, 1979) upper Cambrian-Tremadocian of Norway (Welsch, 1986), Tremadocain of Russia (Loeblich and Tappan, 1978) and Ordovician sediments of Zagros basin (Ghavidel-syooki, 1990).

Acanthodiacrodium tatlense Cramer & Diez, 1977

Plate 1, Fig. 4

Remarks: This species exists in the Lashkarak formation. It has been recorded from Arenigian sediments of Cis-Saharan of Morocco (Cramer & Diez, 1977) and Ordovician sediments of Zagros Basin (Ghavidel-syooki, 1990).

Acanthodiacrodium vavrdovae Cramer & Diez, 1977

Plate 1, Fig. 5

Remarks: The species appears in the Lashkarak formation. so far, it has been recorded from Cis-Saharan in Morocco (Cramer & Diez, 1977), Ordovician sediments of Zagros Basin (Ghavidel - syooki 1990).

Acanthodiacrodium zonaconstrictum Welsch, 1986

plate 1, Fig. 6

Remarks: This species is common in the Lashkarak formation. So far, it has been recorded from Upper Cambrian- Tremadocian of Norway (Welsch, 1987).

Genus *Arbusculidium* Deunff, 1986*Arbusculidium filamentosum* (Vavrdova) Vavrdova 1972

Plate 2, Fig. 9

Remarks: This species appears in the Laskharak formation of Hassanakdar area. So far, it has been recorded from Arenigian shales of Bohemia (Vavrdova, 1965, 1972), Upper Llanvirnian sediments of Germany (Burmman, 1968), Lower Llanvirnian sediments of Tadla basin in Morocco (Cramer & Diez, 1974), Llanvirnian of Tunisia (Cramer & Diez, 1974), Arenigian strata of France (Rauscher, 1974), Arenigian- Llanvirnian of Newfoundland (Martin, 1978), Arenigian of China (Xing, 1980; Li, Jun, 1987) and Lower Ordovician strata of Zagros Basin (Ghavidel-syooki, 1990).

***Arbusculidium rammelaerei* Martin, 1981**

Plate 2, Fig. 10

Remarks: The species is similar to those have been recorded by Martin (1981) it is very rare in the Lashkarak formation. So far, it has been recorded from Early Tremadocian of Germany (Reitz, 1991).

Genus *Athabascaella* Martin, 1984***Athabascaella rossii* Martin, 1984**

Plate 3, Fig. 2

Remarks: This species is well- preserved but rare in the Lashkarak formation, and it is quite similar to those have been recorded from Early Ordovician strata of the United States and Canada (Martin, 1984).

***Athabascaella penika* (Martin) Martin & Leiming, 1988**

Plate 3, Figs. 3

Remarks: This acritarch taxon is rare in the Lashkarak formation and it is quite similar to those have been recorded from Early Ordovician of southern and eastern China (Martin & Leiming, 1988).

Genus *Chomotriletes* Naumova, 1953***Chomotriletes bistchoense* Staplin, 1961**

Plate 4, Fig. 7

Remarks: This species is found in the members of "a" and "b" of the Padcha formation at Kuh-e-Ozom. So far, this species has been recorded from the Frasnian deposits of Canada (Staplin, 1961), Upper Frasinain of Iowa in the U.S.A (Playford & Wicander, 1985), Frasnian part of Faraghan formation (Ghavidel- syooki, 1988), Upper Devonian sediments of Khoshyeilagh and Hassanakdar areas (Ghavidel-syooki, 1992).

Chomotriletes vedugensis Naumova, 1953

Plate 4, Figs. 8-9

Remarks: This species is confined to the members of "a" and "c" of the Padeha formation at Kuh-e-Ozom. So far, it has been recorded from Frasnian of western Australia (Balme, 1962; Playford & Dring, 1981; Playford, 1981), Frasnian of Saudi Arabia (Hemer & Nygreen, 1967) and Frasnian of Faraghan formation (Ghavidel-syooki 1988).

Genus Coryphidium Vavrdova, 1972*Coryphidium elegans* Cramer & Diez, 1974

Plate 4, figs. 11-12

Remarks: This species appears in the upper part of the Lashkarak formation and it is similar to those have been recorded from Upper Arenigian of Tadla Basin in Morocco (Cramer & Diez, 1974). Likewise, this species has been recorded from the Ordovician sediments of Zagros Basin (Ghavidel-syooki, 1980, 1990).

Genus Cymatiogalea (Deunff, 1961) Deunff, Gorka & Rauscher, 1974*Cymatiogalea cristata* (Downie) Rasul, 1974

Plate 5, fig. 3

Remarks: This species is confined to the Lashkarak formation and is common in this rock unit. So far, it has been recorded from Tremadocian of England, (Deunff, Gorka & Rauscher, 1974; Rasul, 1974), Early Tremadocian of Germany (Reitz, 1991). Tremadocian of Zagros basin (Ghavidel-syooki, 1990)

Cymatiogalca cylindrata Rasul, 1974

Plate 5, Fig. 4

Remarks: The species occurs in the Lashkarak formation. So far it has been recorded from Tremadocian of England (Rasul, 1974), Early Tremadocian of Germany (Reitz, 1991), and Tremadocian of Zagros Basin (Ghavidel-syooki, 1990).

Cymatiogalea diversita Deunff, 1961

Plate 5, Fig. 5

Remarks: this species is confined to the Lashkarak formation. So far, it has been recorded from Tremadocian sediments of England (Rasul, 1974).

Cymatiogalea membranispina Deunff, 1961

Plate 5, Fig. 6

Remarks: This taxon is restricted to the Lashkarak formation. So far, it has been recorded from Tremadocian of Algeria (Deunff, Gorka & Rauscher, 1974).

Genus *Cymatiosphaera* (Wetzel, 1933) Deflandre, 1954*Cymatiosphaera hermosa* Cramer & Diez, 1976

Plate 5, Fig. 9

Remarks: This species appears in the Geirud formation. It is rare and associated with *Chomotriletes vedugensis*. This species has been also recorded from Emsian sediments in Spain (Cramer & Diez, 1976).

Cymatiosphaera perimembrana Staplin, 1961

Plate 5, Fig. 11

Remarks: This species occurs in the Geirud formation. So far, it has been recorded from Late Devonian of North America (Staplin, 1961), Middle Devonian of Paraguay (Poth de Baldis, 1974), Upper Devonian of Indiana (Wicander & Loeblich, 1977), Latest Devonian-Earliest Carboniferous of Iran (Coquel et al., 1977), Givetian-Frasnian of Canada (Wicander, 1983), Frasnian of western Australia (Playford & Dring, 1981), Frasnian of the United States (Wicander & Playford, 1985), and Middle-Upper Devonian in Zagros Basin (Ghavidel-syooki, 1988).

Cymatiosphaera platoloma Wicander Loeblich Jr., 1977

Plate 5, Fig. 12

Remarks: This species occurs in the Devonian strata of Khoshyeilagh area. So far, it has been known from Frasnian-Famennian of Indiana in the U.S.A (Wicander & Loeblich, 1976).

Cymatiosphaera craticula Wicander & Loeblich, 1977

Plate 5, Fig. 8

Remarks: This species occurs in the Padeha formation. So far, it has been recorded from Upper Frasnian-Lower Famennian of Indiana in the U.S.A (Wicander & Loeblich, 1977), Frasnian deposits of Iowa in the U.S.A (Wicander & Playford, 1985).

Cymatiosphaera spicigera Playford, 1981

Plate 5, Fig. 13

Remarks: This species is found in both Padeha formation and Khoshyeilagh formation. So far, it has been recorded from Frasnian deposits of western Australia (Playford & Dring, 1981).

Cymatiosphaera subtrita Playford, 1981

Plate 5, Fig. 14

Remarks: This species occurs in both Padeha formation and Khoshyeilagh formation. So far, it has been known from Frasnian deposits of western Australia (Playford & Dring, 1981).

Genus *Crassiangulina* Jardine et al., 1972

Crassiangulina tessellita Jardine et al., 1972

Plate 4, Fig. 13

Remarks: This species is found in the upper Devonian of Khoshyeilagh area. So far it has been recorded from Upper Devonian of Algerian Sahara (Jardine et al., 1972, 1974; Moreau-Benoit et al., 1993).

Genus *Dactylofusa* (Brito & Santos, 1965) Cramer, 1970***Dactylofusa squama* (Deunff, 1961) Combaz, 1967**

Plate 6, Fig. 7

Remarks: This morphotype species is confined to the Lashkarak formation. So far, it has been recorded from Tremadocian of Algerian Sahara (Combaz, 1967) and Tremadocian-Arenigian of Zagros Basin Ghavidel-syooki 1980).

Genus *Dasydiacrodium* (Timofeev) Deflandre-Reigel, 1962***Dasydiacrodium polarum* Jardine et al., 1974**

Plate 6, Fig. 4

Remarks: This species appears in the Lashkarak formation. So far, it has been recorded from Tremadocian of Algerian Sahara (Combaz, 1967).

Genus *Deltotosoma* Playford, 1981***Deltotosoma intonsum* Playford, 1981**

Plate 6, Figs. 5-6

Remarks: This taxon is confined to the Geirud formation. It is rare to very rare. So far, it has been recorded from Frasnian of western Australia (Playford & Dring, 1981), Frasnian part of Faraghan formation (Ghavidel-syooki, 1988), Khoshyeilagh and Padeha formations (Ghavidel-syooki, 1991), Upper Devonian sediments of Kerman (Ghavidel-syooki, 1990), and Upper Devonian sediments of Kuh-e-Ozom (Ghavidel-syooki, 1991).

Genus *Dictyotidium* (Eisenack) Staplin, 1961***Dictyotidium granulatum* Playford, 1981**

Plate 6, Figs. 12-13

Remarks: This morphotype appears in the Geirud formation. So far, it has recorded

from Frasnian strata of western Australia (Playford & Dring, 1981), Frasnian of southeastern-northern Iran (Ghavidel-syooki, 1988, 1991).

***Dictyotidium prolatum* Playford, 1981**

Plate 6, Fig. 14

Remarks: The species is confined to the Geirud formation. So far, it has been recorded from the Frasnian sediments of western Australia (Playford & Dring, 1981).

***Dictyotidium confragum* Playford, 1981**

Plate 6, Fig. 11

Remarks: This species is found in the Padeha formation of Kuh-e-Ozom. So far, it has been recorded from Frasnian deposits of western Australia (Playford & Dring, 1981).

Genus *Diexallophasis* Loeblich, 1970

***Diexallophasis remota* (Deunff) Playford, 1977**

Plate 7, Fig. 2

Remarks: This species is found in both Padeha and Khoshyeilagh formations, 1961), Late Emsian-Givetian of Canada (Playford, 1977), Frasnian of western Australia (Playford & Dring, 1981) and Upper Devonian of southeasten & northern Iran (Ghavidel-syooki, 1988, 1991).

***Diexallophasis simplex* Wicander & Wood, 1981**

Plate 7, Fig. 3

Remarks: this species is found in the member "b" of the Padeha formation of Kuh-e-Ozom. The speceis differes from *Diexallophasis remota* in having psilate, spherical vesicle which its eight processes have freely connection to the central body. The processes are long with small ornamentation.

Genus *Duvernaysphaera* (Staplin) Deunff, 1964***Duvernaysphaera tenuicingulata* Staplin, 1961**

Plate 7, Figs. 4-6

Remarks: This species is only found in the Padeha formation of Kuh-e-Ozom. So far, it has been recorded from Frasnian deposits of Canada (Staplin, 1961), Late Emsian-Givetian of Ontario (Playford, 1977), and Frasnian of western Australia (Playford & Dring, 1981), Devonian rock units of Khoshyeilagh area (Ghavidel-syooki, 1991), and the Geirud formation of Hassanakdar area (Ghavidel-syooki, 1991).

***Duvernaysphaera tessella* Deunff, 1964**

Plate 7, Figs. 7-8

Remarks: This species appears and disappears in the Padeha formation of Kuh-e-Ozom. So far, it has been recorded from Devonian of Tunisia (Deunff, 1964, 1966), Lower-Middle Devonian of Brazil (Brito, 1967, 1976), Middle Devonian and Frasnian of Ghana (Bar & Riegel, 1974), Givetian-Frasnian of Tennessee (Reaugh, 1978), Frasnian of western Australia (Playford & Dring, 1981), Frasnian of Faraghan formation (Ghavidel-syooki, 1988), The Geirud formation of Hssanakdar area (Ghavidel-syooki, 1992), and Devonian rock units of the Khoshyeilagh area (Ghavidel-syooki, 1991).

Genus *Evittia* Brito, 1967***Evittia geometrica* Playford, 1981**

Plate 16, Fig. 7

Occurrence: This species is rare, and confined to upper portion of the Devonian part of the Faraghan formation.

Genus *Gneudnaella* Playford, 1981***Gneudnaella psilata* Playford, 1981**

Plate 8, Fig. 6

Remarks: This species is found in the Padeha formation of Kuh-e-Ozom and it is restricted to member "c". So far, it has known from Frasnian deposits of western Australia (Playford & Dring, 1981).

Genus *Goniosphaeridium* (Eisenack) Martin, 1972***Goniosphaeridium dentatum* (Timofeev, 1959) Cocchio, 1982**

Plate 8, Fig. 9

Remarks: This species is found in the Lashkarak formationis and is very rare. So far, it has been recorded from Tremadocian of Russia (Timofeev, 1959), Tremadocian of England (Rasul & Downie, 1974; Downie & Tappan, 1978), and Tremadocian of U.S.A (Deunff & Massa, 1975).

***Goniosphaeridium sufflatum* Welsch, 1986**

Plate 8, Fig. 5

Remarks: This species exists in the Lashkarak formation. So far, it has been reported from Tremadocian of Norway (Welsch, 1986).

***Goniosphaeridium tener* (Timofeev) Elouad-Debbaj, 1988**

Plate 8, Fig. 8

Remarks: The species is confined to the Lashkarak formation. So far, it as been recorded from Early Tremadocian of Germany (Reitz, 1991).

Genus *Gorgonisphaeridium* Staplin, Jansonius & Pocock, 1965***Gorgonisphaeridium carnarvonense* Playford, 1981**

Plate 8, Fig. 10

Remarks: This species is found in the Geirud formation. So far, it has been recorded from Early Frasnian of western Australia (Playford & Dring, 1981), Upper Devonian sediments of Kuh-e-Ozom (Ghavidel-syooki 1992).

***Gorgonisphaeridium condensum* Playford, 1981**

Plate 8, Figs. 11-12

Remarks: This species is found in the Geirud formation. So far, it has been recorded from Frasnian of western Australia (Playford & Dring, 1981), and Lower Carboniferous of China (Lionda, 1985).

***Gorgonisphaeridium discissum* Playford, 1981**

Plate 8, figs. 13-14

Remarks: The species is confined to the Geirud formation. So far, it has been recorded from Frasnian sediments of western Australia (Playford & Dring, 1981) and Upper Devonian sediments of southeastern and northern Iran (Ghavidel-syooki, 1988, 1991, 1992).

***Gorgonisphaeridium ohioense* (Winslow) Wicander, 1974**

Plate 8, Fig. 15

Remarks: This species is found in the Padeha and Khoshyeilagh formations of Kuh-e-Ozom. So far, it has recorded from Upper Devonian of the U.S.A. (Wicander 1974) and Upper Devonian-Lower Mississippian strata of the U.S.A. (Wicander, 1974).

Genus *Lophosphaeridium* (Timofeev) Downie, 1963***Lophosphaeridium deminutum* Playford, 1981**

Plate 10, Fig. 3

Remarks: This species occurs in the Padeha formation and continues to the base of Khoshyeilagh formation. So far, this species has been recorded from Frasnian strata of western Australia (Playford & Dring, 1981).

Genus *Leiosphaeridia* Eisenack, 1958***Leiosphaeridia* sp.**

Plate 17, Fig. 9

Description: Vesicle circular, 110 μ m in diameter, thick, psilate wall; excystment

structure is median split and observable in most specimens. Encountered specimens in this study are similar to those reported from Middle Devonian of Boyle Dolomite of Kentucky, U.S.A. (Wood and Clendening, 1985). This species is found in all studied sections.

Genus *Lophosphaeridium* (Timofeev) ex. Downie, 1963

***Lophosphaeridium segregum* Playford, 1981**

Plate 10, Fig. 4

Occurrence: This species is abundant throughout The Devonian parts of the Faraghan formation.

Age: The Frasnian of western Australia (Playford and Dring, 1981) and the Frasnian of Iowa, U.S.A., (Wicander and Playford, 1985).

Genus *Melikeriopalla* Tappan & Loeblich, 1971

***Melikeriopalla venulosa* Playford, 1981**

Plate 10, Fig. 6

Occurrence: This species is rare and confined to the upper portion of the Devonian part of Kuh-e-Faraghan and Hassanakdar areas.

Age: The Frasnian of western Australia (Playford and Dring, 1981).

Genus *Micrhystridium* (Deflandre) Downie & Sarjeant, 1963

***Micrhystridium coronatum* Stockmans & Williere, 1963**

Plate 10, Fig. 7

Remarks: This species is found in the Padeha formation of Kuh-e-Ozom. So far, it has been recorded from Upper Devonian sediments of Indiana in the U.S.A. (Wicander & Loeblich, 1977).

Genus *Multiplicisphaeridium* (Staplin) Eisenack, 1969
Multiplicisphaeridium amitum Wicander and Loeblich, 1977

Plate 10, Figs.8-9

Remarks: This species is confined to the upper part of member "b" of the Padeha formation. So far, it has been recorded from Upper Devonian Indiana of the U.S.A. (Wicander & Loeblich, 1977).

Multiplicisphaeridium ampliatum Playford, 1977

Plate 10, Figs. 10-11

Remarks: This species is found, only in one sample of the Padeha formation. So far, it has been recorded from Lower Emsian of Canada (Playford, 1977).

Multiplicisphaeridium ramulosum (Deflandre) Lister, 1970

Plate 10, Fig. 12

Remarks: This species occurs in the Padeha formation. So far, it has been reported from Late Ordovician-Devonian strata (Lister, 1970; Cramer, 1971), Frasnian of Canada (Staplin, 1961), Frasnian of western Australia (Playford & Dring, 1981), Upper Devonian of Iowa in the U.S.A. (Wicander & Playford, 1985), Ordovician-Silurian strata of Zagros Basin (Ghavidel-syooki, 1990).

Genus *Navifusa* Combaz Lange & Pansart, 1967

Navifusa exilis Playford, 1981

Plate 10, Fig. 13

Remarks: This species is found in the Padeha formation of Kuh-e-Ozom. So far, it has been recorded from Frasnian of western Australia (Playford & Dring, 1981), Frasnian of Zagros Basin (Ghavidel-syooki, 1988), Famennian of China (Goo, 1986), Geirud formation of Hassanakdar area (Ghavidel-syooki, 1992), and the Devonian rock units of the Khoshyeilagh area (Ghavidel-syooki, 1992).

Genus *Papulogobata* Playford, 1981

***Papulogobata annulata* Playford, 1981**

Plate 11, Fig. 2

Remarks: This species is found in the Geirud formation. So far, it has known from Frasnian strata of western Australia (Playford & Dring, 1981; Playford, 1981), and southeastern Iran (Ghavidel-syooki, 1988).

Genus *Polyedryxium* (Deunff) ex. Deunff, 1961

***Polyedryxium decorum* Deunff, 1955**

Plate 11, Fig. 5

Occurrence: This species is common in both sections of the Faraghan formation.

Age: Middle-Upper Devonian (Wicander, 1983).

Genus *Priscotheca* Deunff, 1961

***Priscotheca raia* Deunff, 1961**

Plate 11, Fig. 8

Remarks: This species is common in the Lashkarak formation. So far, it has been known from Tremadocian of Zagros Basin (Ghavidel-syooki, in press), and Tremadocian of Algerian Sahara (Deunff, 1961).

***Priscotheca tumida* Deunff, 1961**

Plate 11, Fig. 9

Remarks: This acritarch species is found in the Lashkarak formation of Hassanakdar area. So far, it has been recorded from Lower Ordovician of Zagros Basin (Ghavidel-syooki, 1990, 1992), and Tremadocian of Algerian Sahara (Combaz, 1967).

Genus *Saharidia* Combaz, 1967***Saharidia downiei* Combaz, 1967**

Plate 12, Figs. 9-10.

Remarks: This species is confined to the Lashkarak formation. So far, it has known from Tremadocian strata of Algerian Sahara (Combaz, 1967).

***Saharidia lusca* Playford, 1981**

Plate 12, Figs. 11-12

Remarks: This species appears and disappears in the Geirud formation. So far, it has been recorded from Frasnian of Western Australia (Playford & Dring, 1981).

Genus *Somphophragma* Playford, 1981***Somphophragma miscellum* Playford, 1981**

Plate 18, Fig. 4

Occurrence: This species is very rare in the Faraghan formation and it confined to the upper portion of the Devonian portion of section two.

Age: The Frasnian of Western Australia (Playford and Dring, 1981).

Genus *Stellinium* Jardine et al., 1972***Stellinium comptum* Wicander & Loeblich Jr., 1977**

Plate 13, Figs. 5-6.

Remarks: This taxon is found in the Geirud formation. So far, it has been known from Upper Devonian of the U.S.A. (Wicander & Loeblich, 1977), Givetian of Ohio in the U.S.A. (Wicander & Wood, 1981), Upper Frasnian Iowa of the U.S.A (Wicander & Playford, 1985), Famennian of Belgium (Martin, 1981), Upper Devonian of China (Wicander & Luli-Chang, 1988), Givetian-Frasnian of Argentina (Barreda, 1986), and Upper Devonian of northern Iran (Ghavidel-syooki, 1991).

***Stellinium octoaster* (Staplin) Jardine et al, 1972**

Plate 13, Figs. 7-8.

Remarks: This species is common in the Geirud formation. So far, it has been known from late Devonian of Russia (Sheshengova, 1971), Famennian strata of the U.S.A. (Wicander, 1974), Late Frasnian-Early Famennian of Belgium (Stockmans & Williere 1969, 1974), Late Devonian of Australia (Playford, 1976), Late Frasnian-Early Famennian of the U.S.A (Wicander & Loeblich, 1977), Lower-Middle Devonian of Canada (Playford, 1977), Givetian-Frasnian of Argentina (Barreda, 1986), Late Devonian of Canada (Staplin, 1961), Early Devonian of France (Moreau-Benoit, 1974), Middle-Upper Devonian of Germany (Reigel, 1974), Late Devonian-Early Carboniferous of France (Combaz & Streeb, 1970), Lower-Upper Devonian of Algeria (Jardine & Vapaudjian, 1968; Jardine, Combaz, Magloire, Peniguel and Vachey, 1972, 1974; Lanzoni & Magloire 1969), Lower-Upper Devonian of Ghana (Anan-Syorke, 1974), Late Devonian of Brazil (Daemon, 1974), and Givetian-Frasnian of northern Iran (Kimyai, 1979).

***Stellinium micropolygonale* (Stockmans & Williere) Playford, 1977**

Plate 13, Fig. 9

Occurrence: This species is very rare and confined to upper portion of the Devonian part of The Faraghan formation.

Age: Early-Upper Devonian of Canada (Playford 1977; Playford & Dring, 1981).

***Stellinium protubetrum* Wicander & Loeblich Jr., 1977**

Plate 13, Fig. 10

Remarks: this species appears in the Padeha formation and continues to the Khoshyeilagh formation of the study area. So far, it has been known from Upper Devonian of Indiana, U.S.A (Wicander & Loeblich, 1977).

Genus *Synsphaeridium* Eisenack, 1965***Synsphaeridium catenarium* Playford, 1981**

Plate 14, Fig. 2

Remarks: this species is common in the Padeha formation of study area. So far, it has been recorded from Early Frasnian of western Australia (Playford & Dring, 1981).

Genus *Tunisphaeridium* Deunff & Evitt, 1968***Tunisphaeridium flaccidum* Playford, 1981**

Plate 14, Fig. 3

Remarks: This species is found in the Geirud formation. So far, it has been recorded from Early Frasnian of western Australia (Playford & Dring, 1981).

Genus *Tyligmasoma* Playford, 1977***Tyligmasoma* sp.**

Plate 14, Fig. 4

Remarks: This species exists in the Geirud formation. The morphotype is triangular shape with three veryhachid-appendages which are lighter than the body. This species is rare in the sedimentary samples of Geirud formation.

Genus *Unellium* Rauscher, 1969***Unellium winslowae* Rauscher, 1969**

Plate 14, Fig. 7

Remarks: This species is found in the Geirud formation. So far, it has been known from Middle-Upper Devonian of France (Rauscher 1969), Lower Frasnian of western Australia (Playford & Dring 1981), Upper Devonian of the U.S.A (Wicander & Playford, 1985), Upper Devonian of northern Iran (Ghavidel-syooki, 1991).

Genus *Unellium* Rauscher, 1969

***Unellium piriforme* Rauscher, 1969**

Plate 14, Fig. 6

Remarks: This species occurs in both Devonian rock units of Kuh-e-Ozom. So far, it has been recorded from Middle-Late Devonian of France (Rauscher, 1969), Late Famennian of Belgium (Stockmans & Williere, 1974), and Khoshyeilagh formation of northern Shahrud city (Ghavidel-syooki, 1991).

Genus *Veryhachium* Deunff ex. Downie, 1959

***Veryhachium colemanii* Playford, 1981**

Plate 15, Fig. 2

Remarks: This species is present in the Geirud formation. So far, it has been known from Frasnian of western Australia (Playford & Dring, 1981), and lower Carboniferous strata of China (Lianda, 1985).

***Veryhachium downiei* Stockmans & Willierei, 1962**

Plate 15, Figs. 3-4

Remarks: This species is found in the Geirud formation but it has been recorded from Silurian-Carboniferous strata elsewhere.

***Veryhachium trispinosum* (Eisenack & Deunff) Playford, 1981**

Plate 15, Figs. 14-16

Remarks: This morphotype species is found in the Geirud formation. So far, it has been known from Upper Devonian of northern Iran (Coquel et al., 1977), Givetian-Famennian of the U.S.A. (Wicander, 1983), Upper Devonian Iowa of the U.S.A. (Wicander & Playford, 1985), and Devonian strata of south-eastern Iran (Ghavidel-syooki, 1988).

Genus *Veryhachium* (Deunff) Downie, 1959
***Veryhachium europeum* Stockmans & Williere, 1960**

Plate 15, Figs. 5-7

Remarks: The specimens of this species is common in the Padeha formation of the study areas. So far, it has been recorded by many palynologists from the Silurian through the Devonian Periods.

***Veryhachium lairdii* (Deflandre) Deunff, 1959**

Plate 15, Figs. 8-9

Remarks: This morphotype species occurs in the Padeha formation of the study areas. This species is long-ranging form which has been recorded from the Ordovician through the Devonian strata.

***Veryhachium pannuceum* Wicander & Loeblich, 1977**

Plate 15, Figs. 10-12

Remarks: This species is found very rare in Devonian rock units of Kuh-e-Ozom. So far, it has been recorded from Upper Devonian of Indiana, in the U.S.A. (Wicander & Loeblich Jr., 1977).

***Veryhachium riburgense* Brosius and Bitterli, 1961**

Plate 15, Fig. 13

Description: The specimens are in agreement with those reported from the Permian of West-Pakistan (Sarjeant, 1970, Plate 1, Figs. 18-19, P. 285).

Occurrence: This species is very rare (two specimens) and it appears in one sample of the Faraghan formation in the Chal-i-Sheh area. In this study, acritarchs were not observed in the sections of the Faraghan formation, in Tang-e-Zakin of Kuh-e-Faraghan.

Age: The Permian of Britain (Wall and Downie, 1962) and the Permian of West Pakistan (Sarjeant, 1970).

Genus *Vulcanisphaera* Deunff, 1961
Vulcanisphaera africana Deunff, 1961

Plate 15, Fig. 17

Remarks: This species is confined to the Lashkarak Foramtion. So far, it has been known from Tremadocian of England (Rasul, 1976), Tremadocian of Algerian Sahara (Downie, 1958; Deunff, 1961; Combaz, 1967), Tremadocian of Belgium (Martin, 1968), Tremadocian of Poland (Gorka, 1967), and Tremadocian of Zagros Basin (Ghavidel-syooki, 1990).

Vulcanisphaera nebulosa Deunff, 1961

Plate 15, Fig. 18

Remarks: This morphotype species is found in the Lashkarak formation. So far, it has been recorded from Tremadocian of Algerian Sahara (Deunff, 1961,1964) and Tremadocian of Zagros Basin (Ghavidel-syooki,1990).

Alphabetical arrangement and worldwide records
of Spore taxa

Genus *Acinosporites* Richardson, 1965

Acinosporites salopiensis Richardson & Lister, 1969

Plate 1, Fig. 7

Remarks: This spore taxon is found in the Geirud formation of Hassanakdar area and it is very rare in the term of relative frequency.

Genus *Ambitisporites* Hoffmeister, 1959

Ambitisporites avitus Hoffmeister, 1959

Plate 2, Fig. 5

Occurrence: This species is rare and occurs in four samples (MG-287 to MG-297) of section number two of The Faraghan farmation.

Age: From the Lower Devonian of the Welsh borderland (Edwards and Richardson, 1974), the Early Silurian-Lower Devonian of South Wales (Richardson and Lister, 1969), and the Silurian of Libya (Hoffmeister, 1959; Richardson and Ioannides, 1973).

Genus *Ancyrospora* (Richardson) Richardson, 1962

Ancyrospora longispinosa Richardson, 1962

Plate 2, Fig. 3

Remarks: This species is rare and is found in the Geirud formation of study area. So far, it has been known from Middle Devonian of England (Richardson, 1962, 1964), Middle Devonian of Canada (McGregor & Camfield, 1982), and Frasnian of Zagros Basin in Iran (Ghavidel-syooki, 1982, 1985, 1988).