Summary

This work aimed at studying fossil woods from two localities; Wadi Gabgaba and Cairo-Baharyia Oasis Desert Road. Seventy-three wood specimens were collected for this purpose. The woods were sectioned for microscopical investigation and identification.

1- Wadi Gabgaba: Thirty-two Late Cretaceous wood specimens were collected. Eight of these specimens were preserved well enough to permit identification and the other 24 specimens were badly preserved, however, all the 32 specimens belong to gymnosperm wood.

2- Cairo-Baharyia Oasis Desert Road: Fourty-one Early Miocene wood specimens were collected. Thirty-eight of these specimens were preserved well enough to permit identification and the other three specimens were ill preserved, however, all specimens are dicot woods.

The intensive study of all well preserved specimens showed that all specimens of Wadi Gabgaba could be referred to one species, of gymnosperms while all specimens of Baharyia Road are dicot wood specimens belonging to six species in four genera and two families as comes below:

Wadi Gabgaba

1- *Agathoxylon lifiyii* Youssef et al., Araucariaceae, old record, described earlier from Late Cretaceous of Kharga Oasis.

Cairo-Baharyia Oasis Desert Road

2- *Bombacoxylon owenii* (Carr.) Gottwald, Bombacaceae, old record described earlier from Oligocene to Quaternary of Egypt.

3- *B. langstoni* Wheeler & Lehman, Bombacaceae, new record to Egypt, described earlier only from the Late Creataceous of U.S.A.

4- *Afzelioxylon welkitii* (Lemoigne & Beauchamp) Lemoigne, Leguminosae, old record, described earlier from the Miocene of (Gebel Ruzza), Egypt.

5- *Cynometroxylon tunesense* Delteil-Desneux, Leguminosae, old record described earlier from Lower Miocene of Tunisia and recently from Late Eocene-Early Oligocene of Petrified Forest (Qattamiya), Egypt.

6- *Tetrapleuroxylon acaciae*, (Kräusel) Müller-Stoll & Mädel, Leguminosae, old record, described earlier from Oligocene and Miocene of West of Giza Pyramids.

7- *T. ingaeforme* (Felix) Müller-Stoll & Mädel, Leguminosae, new record to Egypt, but described earlier from Brazil (undetermined age).

This study showed that:

Agathoxylon lifiyii (Araucariaceae) is probably dominant in Wadi Gabgaba, it is represented by eight well preserved specimens. It is known that many Araucariaceae produce wood of high quality, resins and amber **(Stockey, 1982)**. The 24 ill preserved gymnosperm

specimens, probably belong to non-araucarian species possessing timber of lower quality that deteriorated before preservation.

Bombacoxylon owenii is the dominant species in Cairo-Baharyia Oasis Desert Road being represented by 33 out of the 38 identified studied specimens. It is known that bombacoides are large trees producing good timber **(http://courses-ncsu.edu/wps595w/common)**

Two new species of fossil woods *Bombacoxylon langstoni*, and *Tetrapleuroxylon ingaeforme* have been added to the dicot fossil wood flora of Egypt and Africa and this raises the number of petrified wood flora of Egypt from Permian-Triassic to Quaternary from 75 to 77 and Miocene age from 36 to 38.

The palaeoclimate of the Late Cretaceous (and Jurassic) under which the present reported *Agathoxylon lifiyii*, is suggested to have lived, was tropical or subtropical (warm and wet).

Regarding the palaeoclimate of the Early Miocene of the second locality, the four species *Bombacoxylon owenii, Afzelioxylon welkitii Tetrapleuroxylon acaciae* and *T. ingaeforme* indicate tropical and predominantly everwet climatic conditions whereas *B. langstoni,* and *Cynometroxylon tunesense* must have lived in a cool temperate habitat, which necessarily means that these woods were not preserved where they grew but were transported to where they are now found in the desert area crossed by the Cairo-Bahariya Oasis Desert Road.