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On the Neogene Fossil *Palaeoipomoea fukuiensis* gen. et sp.

nov. from Fukui Prefecture, Central Japan*

With Fig. 1, Text-fig. 1 and a Chart

By

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I: Introductory

Several years ago, a pentagonal and five-lobed palmate leaflet was discovered by K. Sasajima, Lecturer of the Fukui University, at Gunzaki, Kosi-Mura, Nyu-Gun, Fukui Prefecture. *** It is the *Palaeoipomoea fukuiensis* nov. gen. et sp., and shows a close relationship with the living species *Ipomoea palmata* Forsk. (Japanese name is "Taiwan-asagao" ; meaning Formosan morning-glory.)

The leaflet of the living species *Ipomoea palmata* is characterized by the five-lobed palmate-form, hence the specific name. The present fossil specimen possesses just the same character.

The material at hand is only a single specimen, but because of distinctly palmate-shape, it may be considered important as an index fossil, as well as an indicator of the palaeoclimatic condition. The living species *Ipomoea palmata* is known to be abundantly growing in the tropical regions of Asia, Africa, America and Australia ; its occurrence in northern Formosa is the northern limit of its distribution in Tropical Asia.

Although the material is by no means satisfactory for discussing affinities, it seems that the very regular shape of the leaf proves itself to represent a definite species comparable with the living species referred to.

In preparing this report, I am indebted to Mr. K. Sasajima, who presented me the specimen, and to Prof. G. Masamune of the Institute of Biology, for his valuable suggestions on the living species : none the less do I owe to Dr. I. Hayasaka, for his kind criticism and reading of manuscript.

II : Geological Notes

This fossil leaf was yielded in the horizon of the Fukatani tuffaceous bed, which is covered by a local unconformity by the Kakihara conglomerate of the lower part of the Tobu bed, characterized by the content of the Vicaryan fauna and *Myrica naumanni*, at

* This report was read at the Community of Palaeontological Society, Japan, in Dec. 19, 1953, at Osaka.

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The Fukatani tuffaceous bed is exposed in the outskirts of Fukui City, as at Fukatani and Shimoichi ***** , where had been yielded many twigs and cones of *Metasequoia japonicum* (Endo) Miki together with leaves of *Castanea angustifolia* Huzioka, cfr. *C. atavia* Unger., *Castaneopsis* ? sp., *Pterocarya asymmetosa* Konno, cfr. *Ulmus longifolia*, *Ulmus* sp., *Zelkova praelonga*, *Cinnamomum* sp., *Machilus oishii* Huzioka, *Laurophyllum* sp., *Camellia protojaponica* Huzioka, *Ilex* sp., *Liquidambar formosana* Hance, *Parrotia fagifolia* (Goepfert) Heer, *Acer* sp., cfr. *Acer trilobatum* Al. et Br., *Marlea aequalifolia* (Goepfert) Oishi et Huzioka, cfr. *M. sinensis* Rupr., *Rhamnus* ? sp.: all of these have been determined by K. Huzioka of Akita University, in 1955 (MS).

On the light of these fossil plants the fossiliferous bed is suggested to represent the upper part of the middle Miocene formation.

Stratigraphical table of the Kunimi Formation

Green Tuff Group	Kunimi Formation (国見累層)	Daishoji Formation (大聖寺累層)	Unconformity
		Tobu bed (燈豊層)	
		Kakihara conglomerate bed (柿原礫岩層)	Loca lunconformity
		Fukatani tuffaceous bed (深谷凝灰質岩層)	
		Ito Formation (糸生累層)	

III: Description of species

Family Ipomoeaceae

This fossil leaf is essentially like that of the living *Ipomoea palamta*.

Palaeoipomoea gen. nov. *****

The only specimen of this plant I have obtained hiterto is an unattached five-lobed palmate leaf. The specimen is complete in outline, and lies on a bedding plane of the compact tuffaceous mudstone, a constituent member of the so-called "Green-Tuff" of the middle Miocene age.

It is shown in the text-figure, enlarged three times natural size.

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***** This was provisionally named *Taiwanasagaoites* in an unpublished the preliminary paper read at Osaka in 1953, however this generic name is believed to be more plausible.

In the following description reference has been made of its likeness to the living species *Ipomoea palmata* Forsk., in all the details available.

The material being a single leaflet which looks very closely allied to the living species *Ipomoea palmata*, it is as a matter of fact, very difficult to distinguish the two from each other. It is chiefly on account of its being a fossil that it is named the *Palaeoipomoea*. The identity of or the difference between *Palaeoipomoea* and *Ipomoea* can be decided only when many more fossil specimens will have been collected and examined.

palaeoipomoea fukuensis sp. nov.

This species here described is new, and its unique leaflet has been yielded Fukui Prefecture, Central Japan.

The specimen measures about 32 mm by 22 mm in length and width, respectively: divided into five lobes, radiating from the central piece and broadening distally: the upper left and the upper right pieces and the lower left and the lower right pieces are of the same size, respectively; that is the leaflet shows a bilateral symmetry: the apices of the five lobes, when connected with lines, form a pentagon.

Locality: Gunzaki, Kosi-Mura, Nyu-Gun, Fukui Prefecture. (Topographical map of the Fukui, 1/50,000 in scale)

Geological horizon: Kunimi Formation, Middle Miocene.

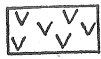
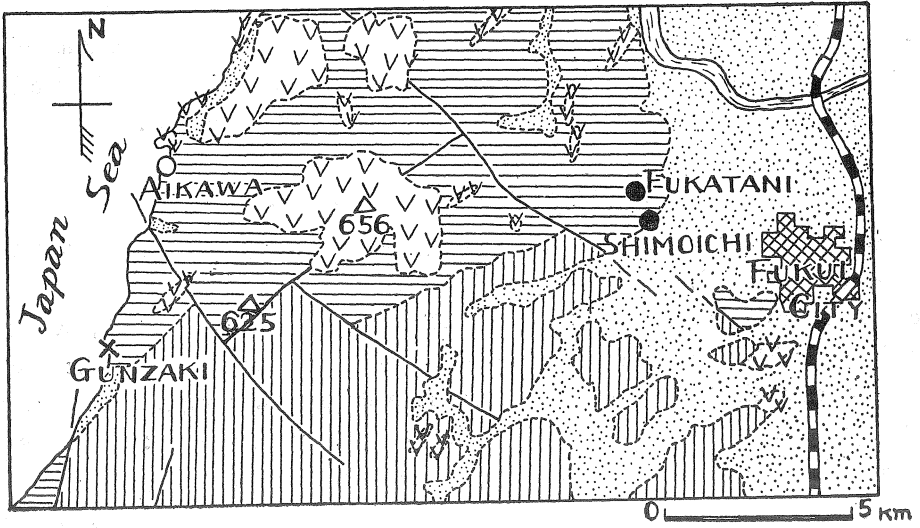
Collector: K. Sasazima, a member of the Fukui University.

Repository: Geological Institute of the Kanazawa University. Reg. No. GKZ10049 (Type specimen).

References

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J. D. Hooker (1885): The Flora of British India. Vol. IV, p. 215.
T. Ito (1926): Illustrated Monograph of Formosan Flora (Taiwan Shokubutsu Zusetsu), P. 741.
J. Matumura & B. Hayata (1906): Enumeratio Plantarum Formosanum. Jour. Coll. Sci. Imp. Univ. Tokyo, Japan. Vol. XXII, p. 264.

Geological map of the middle part of the Nyu Mountainland.
 (from the Geological map of Fukui Prefecture, 1955)



Augite-Andesite . . . Pliocene



Kunimi Formation . . . Miocene



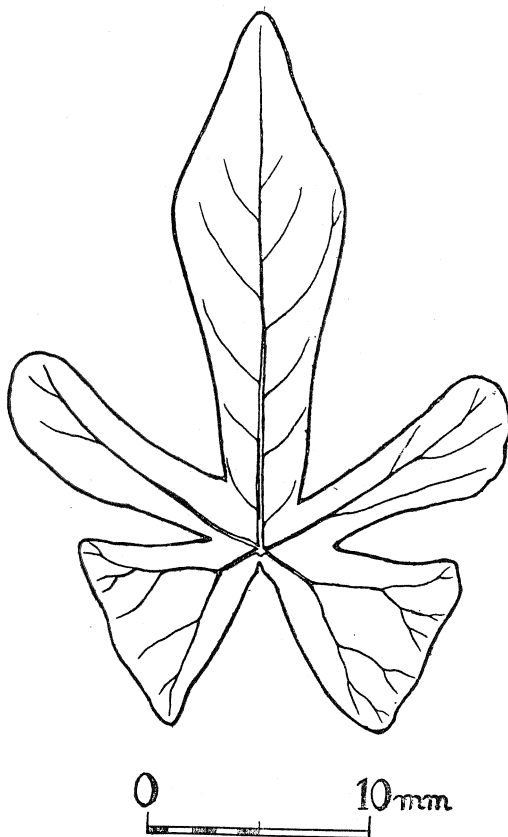
Ito Formation . . . Miocene



Locality of Aikawa Fauna



Locality of Fukatani Flora



Text-figure 1: *Palaeoipomoea fukuensis* gen. et sp. nov.



Figure 1: *Palaeoipomoea fukiensis* gen. et sp. nov.
(in natural size)