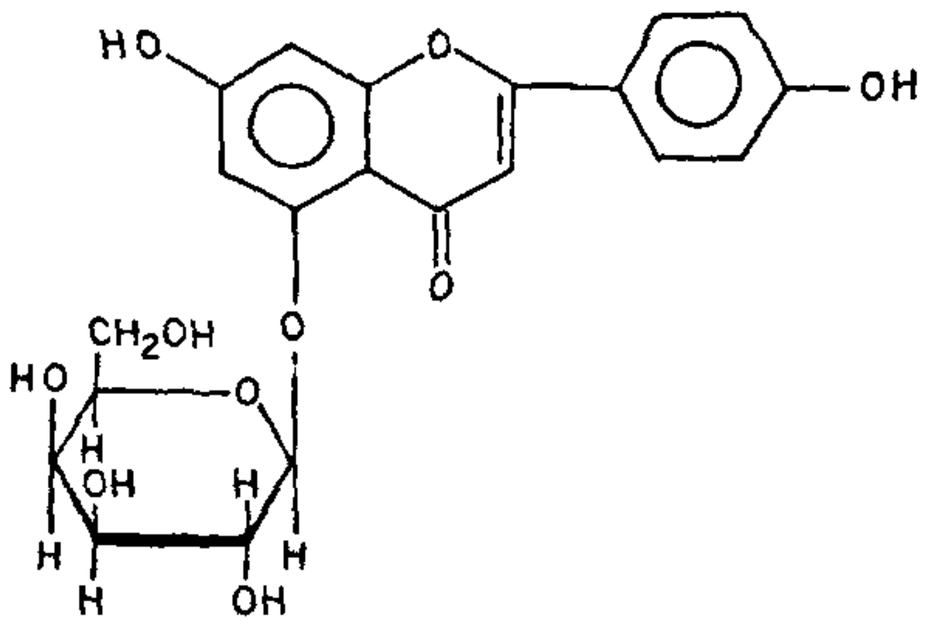
on oxidation gave *p*-hydroxybenzoic acid, m.p. 212° (lit. 214°). Degradation with 50% ethanolic KOH gave *p*-hydroxybenzoic acid and phloroglucinol m.p. 216° (lit. 218°) clearly indicating the presence of hydroxyl groups at positions-5 and -7 in ring A and at position-4′ in ring B. Thus the aglycone was assigned the structure of 5,7,4′-trihydroxy flavone-apigenin[5].

The periodate oxidation showed the consumption of 2.02 moles of periodate with the liberation of 1.01 moles of formic acid per mole of the glycoside, suggesting the presence of only one sugar moiety in its pyranose form. Assignment of the sugar linkage was made by comparing the properties of the aglycone with those of the glycoside.

The aglycone but not the glycoside gave a positive test with vanillin hydrochloric acid reagent[6] for the presence of hydroxyl groups at position-5 and -7. This colour test indicated that the sugar is either linked at position-5 or -7. The sugar linkage at position-5 was confirmed by the fact that a bathochromic shift of 38 nm with 1% ethanolic solution of $AlCl_3$ was observed with the aglycone and not with the glycoside.

Further, the glycoside could be hydrolysed by heating with almond emulsion at 40–50° for 12 hr, indicating the presence of β-linkage. Hence on the basis of studies made so far, the glycoside was assigned the structure of Apigenin-5-O-β-D-galactopyranoside.



Apigenin-5-O-β-D-galactopyranoside

Dried and powdered stem of *Ixora arborea* was extracted with ethanol 6 hr daily for 20 days and the extract was kept in a refrigerator for 2 hr. A yellow deposit was obtained which was filtered and the filtrate concentrated and kept in a refrigerator for another two days. It was then concentrated and segregated into water soluble and water insoluble fractions by pouring into an excess of distilled water. The water insoluble material was filtered and the filtrate was concentrated and subjected to liquid-liquid extraction with increasingly polar solvents like petroleum ether, benzene, chloroform and ethyl acetate.

The ethyl acetate extract on concentration gave a yellowish compound, m.p. 148–50° which when purified by column chromatography over silica gel and crystallised from ethyl acetate: methanol mixture was found to be a single entity by PC and TLC. Found, C = 56.18%; H = 3.50%; $C_{21}H_{20}O_{11}$ requires C = 56.25%; H = 4.96%.

I.R.: 3360, 1650, 1610, 1560, 1525, 1455, 1385, 1310, 1260, 1080 and 830 cm^{-1}.

λ_{max}^{EtOH}: 260 nm and 330 nm; λ_{max}^{EtOH}+$AlCl_3$: 330 nm;

λ_{max}^{EtOH}NaOAc: 268 nm; λ_{max}^{EtOH}+$AlCl_3$: 330 nm;

The glycoside on hydrolysis with ethanolic H_2SO_4 (50 ml, 7%) gave an aglycone and D-galactose. The aglycone was recovered as usual and crystallised from ethyl acetate and methanol mixture, as yellow needles, m.p. 338–40°. Found: C = 66.70%; H = 3.62%; $C_{15}H_{10}O_5$ requires, C = 66.66%; H = 3.70%.

I.R.: 3350, 1650, 1608, 1562, 1525, 1448, 1380, 1310, 1260, 1130 and 1090 cm^{-1}.

λ_{max}^{EtOH}: 263 nm and 334 nm; λ_{max}^{EtOH}+$AlCl_3$: 372 nm;

λ_{max}^{EtOH}NaOAc: 270 nm; λ_{max}^{EtOH}+$NaOMe_3$: 338 nm;

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FOSSIL IMPRESSIONS OF JELLY-FISH IN THE NIMBAHERA LIMESTONE, SEMRI GROUP OF VINDHYAN SUPERGROUP OF ROCKS

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VINDHYAN Supergroup of rocks lack reliable fossils. Vascular microflora, algae and fungal spores, Protobelella jonesi and Fermoria minima have however been reported from several places particularly from the Lower Vindhyans. This paper reports well pre-

served fossil impressions of jelly-fish from the Mandsaur district of Madhya Pradesh which form the important biological evidence for these rocks.

The structure is semicircular and rectangular with maximum diameter about 12 mm indicate the imprint of medusoid coelenterate. The central part is a circular depression which represents mouth of the soft bodied animal. The six radiating ridges are the mesentries which partition the internal body of the animal.

The impressions indicate that the free swimming, soft-bodied organisms lived in shallow low energy environment during late precambrian time.

Figure 1. Fossil impressions of Jelly-fish.

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TWO NEW POST HARVEST DISEASES OF FRUITS FROM INDIA

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DURING a survey of vegetable market at Gwalior two unrecorded fungi were obtained from *Pyrus communis* L. (Pear) and *Abelmoschus esculentus* W. & A. (Ladyfinger). The organisms were isolated on potato dextrose agar medium and they satisfied Koch's postulates. A brief description of the diseases is given below:

1. Dry rot of *P. communis* caused by *Fusarium solani* (Mart.) Sacc.

The lesions appeared as water-soaked areas and were oval or irregular during the early stages. The infected fruit shrivelled gradually. Subsequently the conidia of the fungus appeared in the diseased portions. Entire fruit got dried up within 10–15 days of infection.

The culture has been deposited in C.M.I., England (IMI 257133).

2. Dry rot of *A. esculentus* caused by *Aspergillus flavus* Link. ex Fries.

After two or three days of infection the fruits started drying from the apical end and in 10–12 days these dried completely. In the advanced stage, the fruit showed conspicuous mouldy growth.

The culture has been deposited in C.M.I., England (IMI 257134).

A review of available literature[1,2] indicates that both the diseases are being reported for the first time from India.

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A TERATALOGICAL *COSMOS* WITHOUT RAY FLORETS

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COSMOS bipinnatus Cav., a member of the family Asteraceae (Compositae) is a tropical ornamental annual reaching a height of 150–300 cm. The leaves are 5–10 cm long and bipinnatipartite into filiform lobes. The heads are heterogamous 4–8 cm across with an array of truncate ray florets in white, pink or crimson colours and yellow disc florets. The ray florets are usually female but sometimes sterile with conspicuous absence of the entire gynoecium. The achenes are glabrous 0.8–1.5 cm long with an abrupt beak much shorter than the body.