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Evidence for Interfingering of Suwannee, Ocala, and Avon Park Lithologies in Northeastern Hendry County, Florida

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For some time the lack of Ocala and Suwannee lithology in Dade, Broward and parts of Palm Beach counties has been unexplained. In Winston (1994), it was shown how, in northeastern Palm Beach County, Ocala lithology interfingers with Avon Park lithology. This Contribution presents evidence based on examination of cuttings from two wells in Hendry and Palm Beach counties (Fig. 1), that the Suwannee interfingers with the Ocala, which in turn interfingers with the Avon Park.

The upper section of aquifer test well L-2 (Fig. 1), drilled by the South Florida Water Management District, shows interfingering of Suwannee lithology with Ocala, and Ocala lithology with Avon Park.

In well L-2 at 780 feet (Fig. 2), sandy, phosphatic dolomite of the Hawthorn Group overlies Ocala lithology consisting of tan to cream, chalky to microgranular limestone. Between 866 and 965 feet, Suwannee lithology contains beds of Ocala lithology. The Suwannee is composed of white to cream-colored, very fine-to- coarse-grained skeletal lime grainstones and packstones with included shell fragments.

From 965 to 1211 feet, Ocala lithology contains interbeds of Avon Park facies. The latter consists of cream, tan and orange/tan lime packstones, grainstones and wakestones with very fine to fine and occasionally medium size rounded skeletal grains.

Below 1211 feet, the section is composed entirely of Avon Park lithology.

Typical Ocala fauna of Operculinoides vaughni and small, thin fragments of Lepidocyclina ocalana occur in one thin bed at 866 feet. Just below the Hawthorn, the Ocala lithology is unusual, in that it contains large, thick fragments of Lepidocyclina which are characteristic of the Suwannee.

Echinoderm fragments, normally indicative of the Avon Park, surprisingly occur in Ocala lithology between 1015 and 1096 feet.

"Cone" faunas (Vernon, 1951), which consist mostly of Dictyoconus cookei with uncommon Coskinolina floridana specimens, first appear in cuttings at a depth of 1185 feet in Avon Park lithology. Zones of "cones" and echinoderm fragments are common in Avon Park lithologies to a depth of 1362 feet. None of these fossils are present from 1362 feet to the base of the figured interval of 1500 feet.

In the Belle Glade injection well (59, Fig. 2), some 12 miles northeast of L-2 (Fig. 1), an Avon Park lithology is subjacent to phosphatic limestone of the Hawthorn Group. This interval in well 59 contains neither the lithologies of the Ocala or Suwannee nor their characteristic faunas.

A thick dolomite at 2057 feet in well L-2 (not shown in Fig. 2) correlates with a similar thick dolomite in well 59 at 1920 feet. The base of the Hawthorn Group and the dolomite constrain the upper and lower limits of the correlation shown in Figure 2.

In conclusion, Suwannee lithology changes facies into the Ocala, which in turn changes facies into Avon Park lithology between wells L-2 and 59 (Fig. 2).

Vernon, R.O., 1951, "Geology of Citrus & Levy Counties, Florida", Florida Geol. Surv. Bull. 33, 256 p.

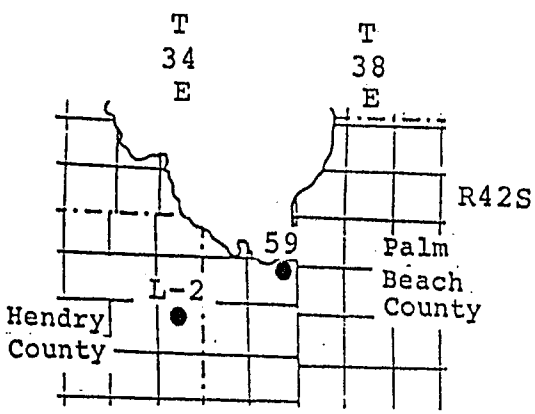
Winston, G.O., 1994, "Evidence for the Interfingering of the Ocala and Avon Park lithologies in southeastern Florida", Miami Geol. Soc., SC3, 2 p.

FAUNA

L large Lepidocyclina
L small Lepidocyclina
O Operculinoides
E echinoderm
C "cones"

LITHOLOGIES

phosphatic dolomite/limestone
Ocala-like limestone
Suwannee-like limestone
Avon Park-like limestone
missing samples



Well Location Map

Figure 1

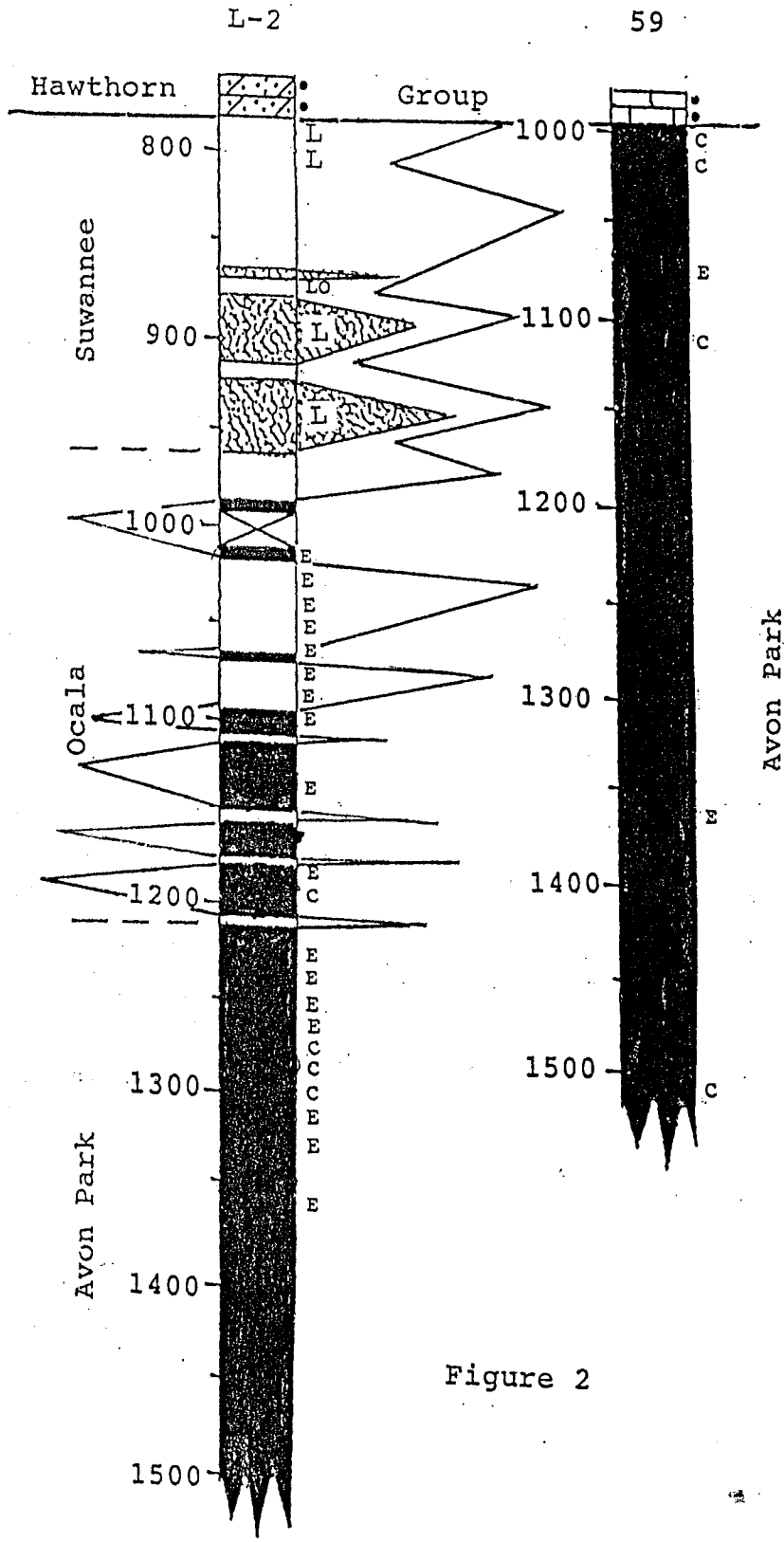


Figure 2