

PALYNOLOGICAL REPORT ON HALIBUT A-1 WELL, 8400 - 9000 FEET

Further to the palynological study (Dettmann 1967) carried out on core and cutting samples from between 7559 feet and 8300 feet in Esso Halibut A-1 well, cuttings from 8400 - 9000 feet have been examined palynologically and the results are assessed in this report. The material examined from between 8400 feet and 9000 feet yielded generally poorly preserved plant microfossils including infrequent spores, pollen grains, and microplankton and abundant wood and cuticular debris.

1) 8400 feet - 8600 feet

Spores, pollen grains, and microplankton extracted from the material examined contain pyritic material adherent to and/or embedded in the wall layers. The plant microfossils are accompanied by foraminiferal remains consisting of inner chitinous tests arranged in planispiral whorls of up to 15 chambers. Spore-pollen species identified include Trifarites edwardsii, Dacrydiunites balnei, and Stethanoporeocollemites obscurus. The presence of these forms and the absence of species restricted to the Cretaceous suggests that the horizons are referable to the Trifarites edwardsii or Transition Zones.

Microplankton extracted from the samples are numerically insubordinate to spores and pollen grains except in a sample from 8400 feet where hystriospheraid types are common. Microplankton species identified include Gimnodinium tabulatum, Cyclonephelium reticulatum, and diverse forms possibly referable to Baltisphaeridium.

2) 8700 feet - 9000 feet

The impoverished microfloras extracted from the samples are poorly preserved and consist chiefly of spores and pollen grains. Microplankton

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were recovered in minor proportions from several samples and include Cyclonephelium retiintertextum and Baltisphaeridium spp. Spore-pollen species identified include Dacrydiunites balnei, Stephanopropollenites obscurus, and Nothofagidites enarcidus. Forms diagnostic of the Tricolpites lillei Zone or older Cretaceous zones were not recognized and the presence of Dacrydiunites balnei may suggest that the sediments are within the Triorites edwardsii or Transition Zones.

#### CONCLUSIONS

Sediments between 3400 feet and 9000 feet in Halibut A-1 well are considered on the basis of their contained microfloras to be possibly within the Triorites edwardsii or Transition Zones. The Triorites edwardsii Zone probably extends as high as 7550 feet (Dettmann 1967) and is succeeded by the Duplonollis orthoteichus Zone (7559 - 7629 feet).

Palynological contents of the D. orthoteichus Zone include dominant spores and pollen grains and rare microplankton. In the T. edwardsii and/or Transition Zones spores and pollen grains are dominant in the majority of samples, but microplankton show a qualitative increase in samples between 8400 feet and 3600 feet where they are associated with foraminiferal remains. Similar associations of abundant microplankton, infrequent spores and pollen grains, and foraminiferal remains have been recorded from the T. edwardsii Zone in Kingfish A-1 well (Dettmann 1963).

#### REFERENCES

- Dettmann, M.E. 1967. Palynological report on Esso Halibut A-1 well, 7559 - 8500 feet. Unpubl. report submitted to Esso Standard Oil (Australia) Ltd. 2/15/67.  
Dettmann, M.E. 1968. Palynological report on Esso Kingfish A-1, B-1, and C-1 wells. Unpubl. report submitted to Esso Standard Oil (Australia) Ltd. 30/3/68.

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