3,505 Pelargonium; 1,647 Pink Patrician; 2,941 Miller's Yellow; 578 Northland; 533 Dark Pink Patrician; 6,993 Hercules Virginia; 3,936 Light Pink Patrician; and 3,205 White Patrician.

Five test plants of *D. barbatus* were concurrently inoculated with an extract from each of the carnation plants tested, using a carborundum powder No. 320 as an abrasive. Equal numbers of plants of uninoculated *D. barbatus* were maintained as controls. Table 1 compares the results obtained with the two techniques.

These data show only very slight differences between results from the ultraviolet light test and those obtained by inoculation of *D. barbatus*. This ultraviolet-fluorescence technique has proved useful for more than 2 years in indexing carnation cuttings for foundation stock. The identity of the fluorescent material is not known. It very likely is not the actual virus, however, because the heat and butanol treatment would have precipitated any protein present during preparation.

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Abundance of N^{15} in the Nitrogen Present in Crude Oil and Coal

Paul V. Smith, Jr. and Boyd E. Hudson, Jr.

Esso Laboratories, Standard Oil Development Company, Linden, New Jersey

A recent paper by White and Yagoda (*1*), disclosed an apparent correlation between the concentration of the N^{15} isotope and the geological age of the pitchblende ores. The abundance of N^{15} increased from the 0.371 ± 0.002 atom % present in the atmosphere today to as much as 0.614 ± 0.012 atom % in a uraninite sample $1{,}050 \times 10^6$ years old.

TABLE 1

N^{15} CONTENT OF SEVERAL COALS AND CRUDE OILS

Description	Geological age in yr ($\times 10^6$)	Atom % N^{15}
Crude oil, Leduc No. 1, Alberta, Canada	290 (Devonian)	0.3715 ± 0.0003
Crude oil, Lloydminster No. 3, Alberta, Canada	105 (Lower Cretaceous)	0.3725 ± 0.0013
Coal, Atoka formation, Seminole, Okla.	230 (Pennsylvanian)	0.3740 ± 0.0016
Coal, Frontier formation, Little Horse Creek, Wyo.	70–110 (Cretaceous)	0.3687 ± 0.0002
Cylinder nitrogen		0.3705 ± 0.0005
Comparative Data by White and Yagoda (1)		
Atmospheric nitrogen		0.371 ± 0.002
Uraninite, Wilberforce, Canada	1,050	0.614 ± 0.012

Inasmuch as no hypotheses were presented which adequately explained this correlation, it seemed of interest to us to see if this same phenomenon might apply to the chemically bound nitrogen found in crude oils and coals. If some such time scale could be established for determining the age of nonradioactive geological samples, it would be of great value to the petroleum geologist in particular.

The nitrogen samples were obtained by the conventional Dumas analytical combustion. The azotometer was then connected through a liquid nitrogen trap to the gas inlet system of a G-E analytical mass spectrometer. In all cases, the gas analyzed contained over 99% nitrogen. Trace amounts of oxygen and water were obtained in several of the samples. As also observed by White and Yagoda, a small peak at mass 30 was found, which may be attributed to $N^{14}O^{16}$.

As shown in Table 1, the percentage abundance of N^{15} in the nitrogen obtained from the organic matter in the oil and coal is essentially the same as found in the atmosphere today. In no case was the deviation greater than the probable over-all reproducibility of the experiments. The values shown in the table are the average of at least three mass spectrographic analyses on each sample.

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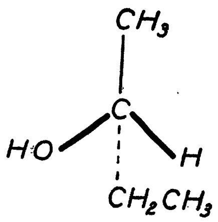
Internal Consistency of Determinations of Absolute Optical Configuration by the One-Electron Theory of Optical Rotation

John F. Lane

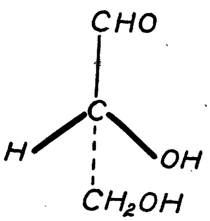
The School of Chemistry, Rutgers University, New Brunswick, New Jersey

In 1938 Eyring and his co-workers (*1*) developed the one-electron theory of optical rotation and, with its aid, assigned to (–)2-butanol the absolute configuration I

I



II



an assignment which was in harmony with the traditional assumption (*2*) of II for the configuration of (+) glyceraldehyde and which agreed with theoretical treatments of this problem by Kuhr (*3*) and Kirk-