tially different fauna from that now living in North America. The Green River insects, also numerous, are strikingly different, for the most part, from those of Florissant. By a sort of paradox, the similarity of the floras lends weight to the differences in the insects. Were the floras quite different, it might be argued that they represented different altitudes or climates and could therefore be contemporaneous, for anything known to the contrary. But since the floras show so many resemblances, it appears probable that the climatic differences were not sufficiently marked to account for the differences in the insects, which must then be ascribed in large part to a considerable time interval.

In general, it must be said that insects are extremely valuable as time-markers, although their evolution in family and generic characters is very slow. They have much better characters than leaves, and the fluctuations of the insect populations have been very marked. Also many genera have died out, and their presence or absence thus becomes significant. Formerly, it could be objected that too few localities for fossil insects were known, but new ones are constantly being discovered, and the whole subject is rapidly assuming such importance that the general paleontologists can not afford to neglect it.

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THE ISOTOPIC FRACTIONATION OF WATER BY PHYSIOLOGICAL PROCESSES

UNDER the above title Washburn and Smith[1] published in this journal some data for the density of highly purified water obtained in the combustion of dry willow tree (*Salix nigra*) wood and of water from the sap of the same. The sap water was 2.8 p.p.m. heavier than normal and the water from the dry wood combustion, 3.2 p.p.m. heavier than normal. This excess density was attributed to an isotopic fractionation of hydrogen in the direction of a preferential selection of deuterium.

It is now known that oxygen of the air has a slightly higher atomic weight than the oxygen combined in Lake Michigan water[2] so that a correction of −6.0 p.p.m. should be applied to Washburn and Smith's value for the density of their dry wood water (assuming that Potomac River and Lake Michigan water have the same density). The resulting value is −2.8 p.p.m., which indicates a preferential rejection rather than a preferential selection of deuterium. However, this value of −2.8 p.p.m. is still subject to some uncertainty;[3] hence more work should be done before the conclusion can be reached that deuterium is preferentially rejected in physiological processes. Mr. R. B. Gibney of this laboratory is at present investigating the whole question.

The datum for the density of the sap water may be subject to an uncertainty involved in the fractionation of the isotopes of water during partial condensation of its vapor;[4] here again, then, it is impossible to conclude definitely that any physiological fractionation of hydrogen occurs.

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APROPOS THE NAZI EDICTS

PROBABLY no single chemist has contributed more to the advancement of world chemistry and to the chemical industry of Germany than did Adolph von Baeyer, 1835–1917. In his laboratories indigo was first synthesized.

Among his outstanding pupils were, to mention only a few, Emil Fischer, Claisen, Curtius, W. H. Perkin, Jr., Büchner, Willstätter, Vanino, Wieland, Graf Schwerin, Holleman, Nef, Gomberg, Walden, W. A. Noyes and Ipatjew. Baeyer's father was a German, his mother, Eugenie, was a Jewess, and Emil Fischer[1] writes: "Er vereinte die guten charaktereigenschaften und Fähigkeiten der germanischen und semitischen Rasse."

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QUOTATIONS

A TRIBUTE TO PAVLOV

IN the obituary notice of Professor Pavlov in the *British Medical Journal* mention will no doubt be made of the International Physiological Congress which was held in Leningrad and Moscow last August under his presidency. It was Pavlov's immense prestige and the deep affection which physiologists, the world over, had for him which made the acceptance of an invitation to the Soviet Union possible. It was Pavlov's prestige and that affection, together with the mixture of playfulness, sternness, impatience, devotion, and simplicity, which formed his character, that

[1] E. W. Washburn and E. R. Smith, SCIENCE, 79: 188, 454, 1934.

[2] M. Dole, *Jour. Chem. Phys.*, in press; *Jour. Am. Chem. Soc.*, 57: 2731, 1935.

[3] See a discussion of uncertainties involved in this work by M. Dole, *Jour. Am. Chem. Soc.*, in press.

[4] M. Dole, *Jour. Chem. Phys.*, 2: 548, 1934.

[1] *Vossische Zeitung*, No. 429, August 23, 1917; cited by Bugge in "Das Buch der grossen Chemiker," Vol. 2, p. 323, Berlin, 1930.