SCIENCE

VOL. 98 FRIDAY, OCTOBER 1, 1943 No. 2544

SCIENCE: A Weekly Journal devoted to the Advancement of Science, edited by J. MCKEEN CATTELL; WARE CATTELL, assistant editor. Published every Friday by

THE SCIENCE PRESS

Lancaster, Pennsylvania

Annual Subscription, $6.00 Single Copies, 15 Cts.

SCIENCE is the official organ of the American Association for the Advancement of Science. Information regarding membership in the Association may be secured from the office of the permanent secretary in the Smithsonian Institution Building, Washington, D. C.

WARFARE AND NATURAL RESOURCES[1]

By Professor HENRY BALDWIN WARD

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THE current literature of the day is replete with vivid pictures of the tremendous struggle in which our nation is involved. Our magnificent isolation between two great oceans has vanished like a dream of the night. What our school books have called a continent is after all only an island, nearer to Europe and Asia than England was to Napoleon.

We are forced to ask ourselves, What of the future? Can we meet the demands of a new era or must we face the realization of the historian's vision that saw the decline of western lands and the passing of power to new nations?

As nation after nation fell into the hands of the plotter, we waited and watched with fatuous confidence that such things could not happen here. Rudely awakened from our dream we are bewildered by vast and urgent demands of a war front that girdles the globe and involves all nations. Confusion is the order of the day. The conflict allows of no compromise, and we are committed to the defense of our freedoms. We must win the war. Every activity, every interest must be subjected to the acid test that will decide its relations to our purposes.

Among the topics which have loomed large in public discussion, no one has demanded in recent years more general attention than that of our natural resources. What then could be more appropriate for the annual conference of the Texas Academy of Science than your program with its discussion of the relations of natural resources to war, the foremost obligation of this nation to-day.

[1] Invitation lecture at the annual meeting of the Texas Academy of Science, November 13, 1942.

Fig. 1 shows the electrophoretic pattern obtained from the normal unheated plasma. Fig. 2 was obtained from the sample that was heated for one hour at 65° C. in the absence of glucose. A decrease in the areas of all the visible constituents as compared with the normal plasma in Fig. 1 is evident. The

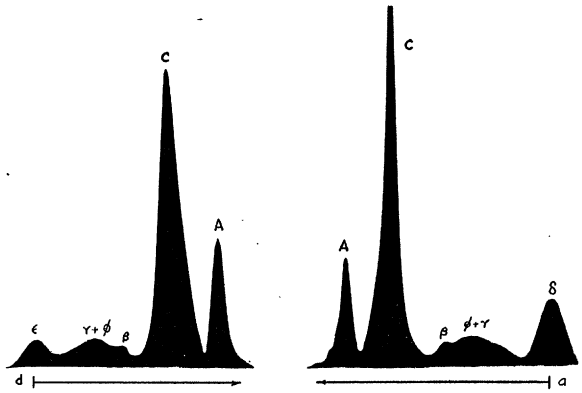

FIG. 2

"C" component appears in the region of the alpha globulins, and its concentration is such that the peak on the ascending side extends beyond the plate. Fig. 3 shows the effect of heating the plasma in the presence of saturated glucose. The pattern does not show the "C" component after this condition of heating. However, the fibrinogen, beta and gamma globulin areas have decreased while a small new peak (x) is observed in the descending pattern next to the alpha-2 globulin.

The sharp peaks (y) near the beta globulin patterns may have originated from normal constituents in the plasma whose properties have been changed by the heating process or they may represent lipide disturbances.

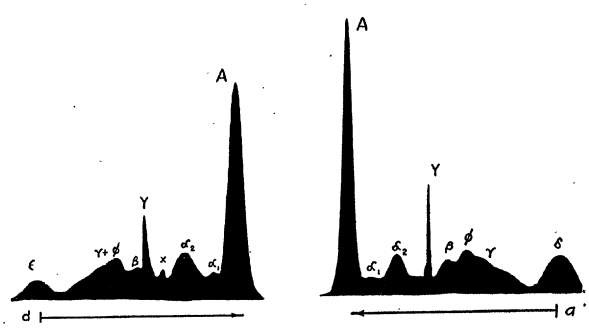

FIG. 3

In Table 1 are set forth the calculated mobilities of the components of the different samples. There is close agreement between values for all plasma samples. No significant differences in mobilities have been observed between normal plasma and plasma heated at 65° C. in the presence of saturated glucose.

TABLE 1

Sample description	Mobilities u × 10⁻⁵									
	A	α^1	α^2	C	x	y	β	φ	γ	φ+γ
Normal plasma	6.78	6.04	5.35				3.53	2.75	2.48	
Plasma and glucose heated at 65° C	6.55	5.82	4.81		4.16	3.60	3.31	2.62	2.11	
Plasma heated at 65° C	6.86			5.08			3.39			2.34

It is believed that the protective action of glucose against the heat coagulation of plasma proteins may be of considerable significance in studies pertaining to proteins. Further investigations of this nature are in progress and will be reported on at a later date.

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BOOKS RECEIVED

BLOOR, W. R. *Biochemistry of the Fatty Acids and Their Compounds, the Lipids.* Pp. xi + 387. Reinhold Publishing Corporation. $6.00.

Carnegie Institution of Washington Publication 555. Biological Results of the Last Cruise of the Carnegie. Illustrated. Pp. v + 92. $1.00, paper cover; $1.50, cloth binding.

CLANCEY, VERNON J. *Chemistry and the Aeroplane.* Illustrated. Pp. vi + 176. The Ronald Press Company. $2.25.

CONKLIN, EDWIN GRANT. *Man: Real and Ideal.* Pp. xvii + 247. Charles Scribner's Sons. $2.50.

GRAHAM, HERBERT W. *Studies in the Morphology, Taxonomy and Ecology of the Peridiniales.* Publication No. 642. Illustrated. Pp. vii + 129. Carnegie Institution of Washington. $1.50, paper cover; $2.00, cloth binding.

HECTOR, L. GRANT, HERBERT S. LEIN and CLIFFORD E. SCOUTEN. *Electronic Physics.* Pp. viii + 355. Illustrated. Blakiston Company. $3.75.

HUMPHREYS, W. J. *Fogs, Clouds and Aviation.* Illustrated. Pp. xii + 200. Williams and Wilkins Co. $3.00.

JACOBS, WOODROW C. and KATHERINE B. CLARKE. *Meteorological Results of Cruise VII of the Carnegie, 1928–1929.* Publication No. 544. Illustrated. Pp. iv + 168. Carnegie Institution of Washington. $1.50, paper cover; $2.00, cloth binding.

KRIEGER, HERBERT W. *Island Peoples of the Western Pacific Micronesia and Melanesia.* Illustrated. Pp. iv + 104. Smithsonian Institution.

LEIGHTON, HENRY L. C. *Solid Geometry and Spherical Trigonometry.* Illustrated. Pp. xix + 210. D. Van Nostrand Company. $2.20.

PETERSEN, WILLIAM F. *Lincoln Douglas, The Weather as Destiny.* Ilustrated. Pp. x + 207. Charles C Thomas. $3.00.

SMALL, SIDNEY AYLMER and CHARLES RAMSEY CLARK. *Simplified Physics.* Illustrated. Pp. x + 428. E. P. Dutton and Co. $3.00.

STRONG, EVERETT M. *Electrical Engineering Basic Analysis.* Illustrated. Pp. xii + 391. John Wiley and Sons. $4.00.

THOMSON, ANDREW. *Upper-Wind Observations and Results Obtained on Cruise VII of the Carnegie.* Publication No. 547. Illustrated. Pp. vii + 93. $0.75, paper cover; $1.00, cloth binding.

WEEKS, ARTHUR W. and H. GRAY FUNKHOUSER. *Plane Trigonometry.* Illustrated. Pp. viii + 193. D. Van Nostrand Co. $1.75.