taneously, for, as may be seen from Fig. 1, the absorption curve of the DDT sample rises abruptly below 250 mμ.

(3) The time of heating should be within 0.25 minutes of 5.

Apparatus

The Beckman quartz ultraviolet photoelectric spectrophotometer (*2*) has been used throughout this work. The wave length scale was standardized, as recommended, with the hydrogen 656-mμ line. It was checked in the ultraviolet region by determining the absorption maxima of a 0.02-per cent benzene solution in iso-octane. The three highest maxima were observed at 261, 245.5, and 249 mμ, which are within 1 or 2 mμ of the values in the International Critical Tables.

TABLE 1

Spectrophotometric Analysis of Different DDT Preparations

DDT/ml. in μg.	Absorption Density—Log I_0/I											
	3 × Crystallized p,p′-DDT			Merck Commercial			Geigy Commercial			Artificial Mixture 75% p,p′-DDT and 25% o,p′-DDT*		
	A	B	Δ	A	B	Δ	A	B	Δ	A	B	Δ
2	.14	.082	.06	.12	.08	.04	.115	.06	.055	.1	.06	.04
5	.32	.155	.165	.275	.165	.11	.275	.155	.12	.285	.145	.14
10	.63	.31	.32	.565	.295	.27	.56	.31	.25	.55	.32	.23
20	1.23	.62	.61	1.07	.58	.49	1.12	.60	.52	1.08	.6	.48

* This and most of the other related pure chemicals were kindly placed at our disposal by S. J. Cristol and H. L. Haller, of the Agricultural Research Administration, Beltsville, Maryland.

(4) The reaction is bimolecular, and the rate is proportional to the hydroxyl ion concentration.

(5) The temperature of the reaction should be controlled to a few tenths of a degree. The results of the work of Cristol (*3*) indicate a temperature coefficient of about 3 for 10° C.

(6) The time of standing after neutralization of the alkali causes no appreciable change up to several hours.

Extinction

The extinction, $E^{1\%}_{1\ cm.}$, for pure p,p′-DDT olefin at 250 mμ, close to a peak of absorption, is about 550, and the molecular extinction, ε, is about 18,000. The peak of absorption for pure p,p′-DDT is at 237 mμ, the extinction in this case being 550, and ε, 20,000.

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Letters to the Editor

The Ascorbic Acid Content of Some Malpighia Fruits and Jellies

In a recent issue (*Science*, 1946, **103**, 219) Asenjo and Freire de Guzmán reported the exceptionally high ascorbic acid content of the West Indian cherry (*Malpighia punicifolia* L.). These workers found that the fruits, when fully ripe, contain an average of 1,707 mg. of ascorbic acid per 100 grams of edible material and, when unripe, 2,963 mg.

Apparently some confusion exists as to the identity of the species of Malpighia grown in southern Florida and commonly referred to as the Barbados cherry. Mowry and his associates (*Fla. agric. Exp. Sta. Bull.*, 1941, **109**, 65–67) have applied this common name to *M. glabra*, whereas Sturrock, in his *Tropical fruits for southern Florida and Cuba and their uses* (1940), has applied it to *M. punicifolia*.

In the present investigation, fruits and herbarium material were collected from four plants, three of which were thought by their growers to be *M. glabra* and one, *M. punicifolia*. The latter bush is located at the U. S. Plant Introduction Garden, a few miles south of Miami, Florida. All of these herbarium specimens were identified by H. A. Gleason and his associates, of the New York Botanical Garden, as *M. punicifolia*. Fruits were also collected from a plant of *M. coccigera* and from an un-

identified species of Malpighia bearing small, red fruit. Five jars of homemade "Barbados cherry" jelly were also obtained for analysis. The identity of the species of Malpighia used in the preparation of this jelly is unknown to the author. A small amount of lime juice was used in place of commercial pectin in the preparation of the jelly.

The colorimetric method described by Loeffler and Ponting (*Ind. eng. Chem.* (Anal. ed.), 1942, 14, 846–849) was followed in making these ascorbic acid determinations except that a calibration curve was used instead of the formula recommended by these workers for converting the colorimeter readings into milligrams of ascorbic acid per 100 grams of fruit. The results of the analysis are given below:

TABLE 1

DATA ON THE ASCORBIC ACID CONTENT OF SOME MALPIGHIA FRUITS AND JELLIES

Material	Description of sample	No. of analyses	Ascorbic acid content (mg./100 grams edible fruit)	
			Average	Range
M. punicifolia L.				
	Tree A			
	Slightly over-ripe	4	1,219	1,028–1,378
	Firm ripe	8	1,579	1,268–1,778
	Almost ripe	4	2,103	2,019–2,172
	Beginning to ripen	8	3,250	2,710–3,774
	Unripe	4	4,468	4,090–4,676
	Trees B_1 and B_2			
	Firm ripe	2	2,712	2,712–2,712
	Unripe	2	4,462	4,400–4,524
	Tree C			
	Firm ripe	4	1,699	1,564–1,782
M. coccigera L.				
	Ripe	4	69	64– 74
Malpighia sp.				
	Ripe	4	17	14– 21
Barbados cherry jelly				
	Individual jars			
	#1	3	683	674– 688
	#2	3	499	499– 500
	#3	3	763	725– 807
	#4	3	541	538– 546
	#5	2	509	492– 525

It is apparent from these data that the *M. punicifolia* grown in southern Florida is also an excellent source of ascorbic acid. These unripe fruit were found to contain considerably more ascorbic acid than those grown in Puerto Rico. The other two species of Malpighia were found to contain a comparatively small amount of ascorbic acid. The high ascorbic acid content of the jelly, highly acclaimed for its flavor and color, is particularly noteworthy, since much of the fruit of the so-called Barbados cherry is utilized in its preparation. An average serving of approximately three level teaspoonfuls of this jelly will more than supply the daily requirement of 100 mg. of ascorbic acid.

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Notes on the Results of Army Intelligence Testing in World War I

Publications during the past two years have indicated a renewed interest in the Army tests of World War I with regard to their significance for the problem of Negro-white differences in intelligence. While most studies have been primarily concerned with the Alpha examination, M. F. A. Montagu's work (*Amer. J. Psychol.*, 1945, 58, 161–188) suggests that a more extensive consideration of the Beta results may be worth while.

The Beta is a performance test designed for use with illiterate and foreign groups in the population. Although it is widely recognized that socioeconomic opportunities play an important role in determining Alpha scores, it is not generally clear that Beta scores are similarly influenced. For this reason it may be incorrectly assumed that, while Negro-white differences in Alpha level cannot be taken at face value, Beta differences (which Montagu found to be in the same direction) indicate innate 'racial' inequality. It is our purpose here to show, however, that the Beta levels for the various states are significantly related not only to Alpha levels for the same states but also to yearly educational expenditures and per capita incomes. These correlations are presented in Table 1.

TABLE 1

RANK-ORDER CORRELATIONS BETWEEN MEDIAN BETA SCORES FOR THE VARIOUS STATES* AND MEDIAN ALPHA SCORES,* ANNUAL EDUCATIONAL EXPENDITURES (1910), AND PER CAPITA INCOMES (1919)

(All coefficients significant at 1 per cent level)

	Educational expenditures per capita population, 5–17 yrs.†	Per capita income‡	Alpha (white)	Alpha (Negro)
Beta (white)	.64 (.81)§	.50 (.64)§	.67	..
Beta (Negro)	.72 (.76)§	.67 (.72)§	..	.65

* Data from Montagu. N ranges from 47 to 49 in the case of the correlations for whites and from 23 to 24 in the case of those for Negroes.

† Expenditures for public elementary and secondary schools (1910). Data from *Statistical Abstracts of the United States*, 1930, No. 52, U. S. Dept. of Commerce.

‡ Data from W. C. Bagley's *Determinism in education*. Baltimore, Md.: Warwick and York, 1925.

§ Figures in parentheses are comparable correlations with median Alpha scores.

Why should there be a significant relationship between the intelligence of literate and illiterate samples from the populations of the various states? The hereditarian might, of course, argue that the Alpha-Beta correlation for whites merely reflects the presence in the industrialized northern states of intelligent but non-English-speaking immigrants, although in other contexts the relatively low intelligence scores of these immigrant groups cause them to be referred to as the 'dregs' of Europe. However, hereditarians can only explain away the Alpha-Beta correlation for Negroes by postulating selective migration, an hypothesis which Klineberg's work (*Race differences*. New York: Harper, 1935) has largely invalidated. It is probably most warranted to conclude from the correlations presented here that Beta scores, like Alpha scores, are strongly influenced by cultural factors concomitant with the socioeconomic levels of the states; verbal and numerical facility are not the only evidences of environmental forces. From this point of view group differ-