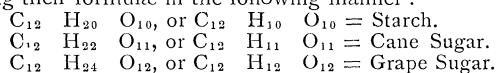


composition of these substances may be compared by arranging their formulæ in the following manner :



Grape-sugar is largely diffused throughout the animal kingdom, and is found in most of the sweet tasting fruits. It is contained in the honey of the bee, and is separated in large quantities in the urine of those unfortunates who suffer from that disease of the kidneys called *diabetes mellitus*. Grape-sugar is not only found in nature but can be produced chemically. Thus it is formed as a result of the action of diluted acids, diastase, gluten, saliva, etc. on starch, and for this reason starch is used for its production on a large scale.

The fullest directions are given in this work for the manufacture of glucose from starch, and we congratulate the publishers on producing a book at a moment so *apropos*, and we regret we cannot devote more space to the subject; we advise, however, all interested in this new and rising industry to obtain a copy of the work, for it apparently presents all the facts bearing on the manufacture of glucose, in a very convenient form.

REPRODUCING DRAWINGS, DESIGNS, &c.

The following method of reproducing drawings, &c., in any desired color, has been patented by M. M. Tilhet, of 18 Rue de la Paix, Paris. The paper upon which the design is to be reproduced in order to prepare a negative copy is first passed through a bath composed of the following materials in about the proportions given: White soap, 30 parts by weight; alum, 30 parts; Flanders glue, 40 parts; the

white of eggs or albumen beaten up, 10 parts; glacial acetic acid, 2 parts; alcohol at 60 degrees, 10 parts; water, 500 parts. The paper, after having been removed from this bath, is passed through a second bath composed as follows: Burnt umber, ground in alcohol, 50 parts by weight; black pigment, 20 parts; Flanders glue, 10 parts; water, 500 parts; bichromate of potash, 10 parts. The paper having been thus treated must be kept when dry in a dark place. In order to prepare positive paper for the prints, a bath is used similar to the last, but without the umber, for which black pigment is substituted. Or, if it is desired to obtain colored proofs instead of black ones, the black pigment is replaced by a pigment of red, blue, or any other desired color. To prepare the copies, the design or drawing is placed in an ordinary photographic printing frame, the back of the design being next to the glass, and a sheet of negative paper prepared in the way first described is placed in contact with it. The frame is then exposed to light, two minutes exposure being sufficient in good weather. The sensitive paper is then removed from the frame in a dark place and is placed in water, when the design becomes visible in white, and the paper is then allowed to dry. In order to obtain positive pictures from the negative thus prepared, the latter is placed in the printing-frame with a sheet of the positive paper prepared in the manner above described in contact with it, and after exposure to light for a sufficient time, that is to say, about two minutes, the positive paper is removed in a dark place, and is plunged into water, which removes the part of the pigment which has not been affected by the light, without its being necessary to touch it. Any number of copies of the design or drawing may be produced by the novel method described upon any kind of paper, and in any color or colors. The proportions of the different materials used to prepare the baths as above described may be varied to suit varying circumstances, such as the weather and the character of the design, or of the paper.

METEOROLOGICAL REPORT FOR NEW YORK CITY FOR THE WEEK ENDING JULY 23, 1881.

Latitude $40^{\circ} 45' 58''$ N.; Longitude $73^{\circ} 57' 58''$ W.; height of instruments above the ground, 53 feet; above the sea, 97 feet; by self-recording instruments.

BAROMETER.						THERMOMETERS.										
JULY.	MEAN FOR THE DAY.	MAXIMUM.		MINIMUM.		MEAN.		MAXIMUM.			MINIMUM.			MAXIMUM.		
	Reduced to Freezing.	Reduced to Freezing.	Time.	Reduced to Freezing.	Time.	Dry Bulb.	Wet Bulb.	Dry Bulb.	Time.	Wet Bulb.	Time.	Dry Bulb.	Time.	Wet Bulb.	Time.	In Sun.
Sunday, 17--	29.579	29.618	o a. m.	29.508	5 p. m.	73.6	66.6	81	2 p. m.	72	2 p. m.	64	12 p. m.	60	12 p. m.	131.
Monday, 18--	29.523	29.596	o a. m.	29.446	4 p. m.	69.3	61.3	74	4 p. m.	63	4 p. m.	62	6 a. m.	59	6 a. m.	126.
Tuesday, 19--	29.611	29.690	12 p. m.	29.542	o a. m.	74.7	65.0	84	3 p. m.	68	4 p. m.	66	6 a. m.	60	6 a. m.	130.
Wednesday, 20--	29.686	29.742	9 a. m.	29.632	12 p. m.	77.3	68.0	83	5 p. m.	71	5 p. m.	69	6 a. m.	65	6 a. m.	123.
Thursday, 21--	29.553	29.638	12 p. m.	29.500	2 p. m.	78.3	69.3	87	3 p. m.	72	2 p. m.	69	12 p. m.	64	12 p. m.	135.
Friday, 22--	29.596	29.638	o a. m.	29.549	6 p. m.	73.3	66.0	77	3 p. m.	69	6 p. m.	66	5 a. m.	62	6 a. m.	127.
Saturday, 23--	29.646	29.722	12 p. m.	29.586	3 a. m.	72.0	65.7	79	3 p. m.	68	3 p. m.	65	5 a. m.	61	5 a. m.	139.

Mean for the week.....	29.599 inches.	Mean for the week.....	74.0 degrees.	Mean for the week.....	65.9 degrees.
Maximum for the week at 9 a. m., July 20th.....	29.742 "	Maximum for the week at 3 p. m., 21st 87.		Maximum for the week at 2 p. m., 21st, 72.	
Minimum " " at 4 p. m., " 18th.....	29.446 "	Minimum " " 6 a. m., 18th 62.		Minimum " " at 6 a. m., 18th, 59.	
Range.....	.296 "	Range " "	25.	Range " "	13.

WIND.										HYGROMETER.									CLOUDS.						RAIN AND SNOW.					OZONE.
JULY.	DIRECTION.			VELOCITY IN MILES.	FORCE IN LBS. PER SQR. FEET.		FORCE OF VAPOR.			RELATIVE HUMIDITY.			CLEAR, OVERCAST,			DEPTH OF RAIN AND SNOW IN INCHES.			Time of Begin- ing.	Time of End- ing.	Dura- tion. h. m.	Amount of water								
	7 a. m.	2 p. m.	9 p. m.	Distance for the Day.	Max.	Time.	7 a. m.	2 p. m.	9 p. m.	7 a. m.	2 p. m.	9 p. m.	7 a. m.	2 p. m.	9 p. m.	Time of Begin- ing.	Time of End- ing.	Dura- tion. h. m.					Amount of water							
Sunday,	17	w. n. w.	w. n. w.	n. n. w.	217	6	4.40 pm	.537	.663	.495	71	63	70	3 cir. cu.	2 cir. cu.	o	-----	-----	-----	-----	-----	-----	-----							
Monday,	18.	n. w.	w. n. w.	w. n. w.	238	9½	11.40 am	.433	.429	.449	73	51	61	1 cir.	7 cir. cu.	o	-----	-----	-----	-----	-----	-----	-----							
Tuesd. y,	19.	w. n. w.	n. w.	w.	219	6½	1.50 pm	.457	.460	.554	69	42	64	o	1 cir.	1 cir. cu.	o	-----	-----	-----	-----	-----	-----							
Wednesday,	20.	w.	w. s. w.	s. w.	156	2½	1.30 pm	.537	.534	.612	71	49	62	4 cir. cu.	3 cir. cu.	s 10	-----	-----	-----	-----	-----	-----	-----							
Thursday,	21.	w. s. w.	n. w.	n. n. w.	227	4¾	3.20 pm	.614	.609	.568	68	51	67	3 cir. cu.	4 cir. cu.	o	-----	-----	-----	-----	-----	-----	-----							
Friday,	22.	n. w.	n. n. w.	n. n. e.	82	1½	8.50 pm	.495	.564	.568	70	61	67	2 cir.	9 cu.	o	-----	-----	-----	-----	-----	-----	-----							
Saturday,	23.	n.	n. e.	n. n. w.	140	2	2.30 pm	.489	.564	.595	74	61	76	8 cir. cu.	4 cir. cu.	1 cir. s.	-----	-----	-----	-----	-----	-----	-----							

Distance traveled during the week..... 1279 miles.
Maximum force..... 9½ lbs.

Total amount of water for the week..... 0 inch.
Duration of rain..... 0 hours 0 minutes.

DANIEL DRAPER, Ph. D.

Director Meteorological Observatory of the Department of Public Parks, New York.