several kind of slags.

It is found that the time when pig and slag reach the equilibrium is 2.5 hours at 1400°C and 2 hours at 1500°C on the first experiment. The following results were obtained by the second experiment:

Temperature	Pig		Slag			
	C%	Si%	SiO_2%	CaO%	Al_2O_3%	Basicity
1400°C	3.78	3.55	58.9	31.5	9.28	0.53
	4.28	1.87	46.5	41.0	9.70	0.88
	4.52	1.36	44.3	46.5	8.71	1.05
1500°C	3.57	5.67	68.7	20.2	10.34	0.29
	3.71	4.63	57.7	31.8	9.39	0.55
	4.20	2.93	46.1	43.0	9.46	0.93
	4.36	2.21	38.4	50.4	9.42	1.31

From these results we found that the higher the basicity of slag, the larger the solubility of carbon in pig iron and smaller the solubility of silicon in it. Thus from the above results we obtained the equilibrium relation between carbon and silicon in pig iron at 1400°C and 1500°C.

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10. Determination of the Density Change of Glass by the Sink-Float Method. (V). Determination of the Efficient Compacting Schedule of Glass

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To find out the efficient compacting- or stabilizing- schedule of glass, the density change of soda-lime glass of a definite composition subjected to various heat treatments was measured by the sink-float method (cf. this Bull. **19** (1949) 52). Unannealed rods of the glass, 3~5mm. in diameter and ca. 20cm. in length, were treated in the electric furnace having constant linear axial temperature distribution between 600°~400°C. After having been treated for a definite time, the rods were taken out rapidly from the furnace and cooled down in air to room temperature. They were cut and devided into the pieces of 5~10 mm. long and their densities were determined by the above method. It was found that the density of a certain section of rod samples corresponding to a definite heating temperature had the maximum value. The temperature T_m (°C) at which this maximum value occurs decreases with the holding time t (minute) according to the equation (cf. ibid., **25** (1951) 62):

$$T_m = 527 - 18 \cdot \mathrm{Log}_{10} t \qquad (1)$$

Furthermore, it was observed that the rate of increase of the density D (g./cm.^{3}) reached to a maximum at a certain temperature Tv. The temperature Tv (°C), at which the condition $d(dD/dt)/dT = 0$ was satisfied, was found to decrease with time t (minute) according to the equation:

$$T_v = 521 - 18 \cdot \mathrm{Log}_{10} t \qquad (2)$$

Hence it may be said that the most efficient compacting method of the glass is the one with which the temperature is lowered continuously by the schedule represented by the equation (2). But it was found that the difference between the density of glass treated by the above schedule and that by the equation (1) is so small (ca, 0.0002 g./cm.^{3}) that it is almost within the error of the density measurements. The constant temperature holding, therefore, can be adopted as the practically efficient compacting method of the glass.

It is believe that, for its simplicity and accuracy this method of density determination is especially convenient for finding out the most efficient compacting schedule of glass.

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11. Studies on the Application of Electrostatic Spraying to Porcelain Enamels. (II)

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In the previous paper (this Bull. **25**, (1951), 60), the authors have confirmed that the application of the electrostatic field in the spray booth will be the most effective method for obtaining the possible uniform coating with minimum loss due to overspray. The uniformity obtained by the former experiments, has been left much to be desired, however, especially for the materials of complicated shapes such as kitchen wares. To obtain the heigher uniformity in coating, the authors have designed a new booth in which the specimens can rotate on their axis during they travel through the electrostatic field.

An overhead monorail conveyer was put up and a booth was build around it to house the electrodes within the spary zone. Two copper wire netting 40 cm in height and 150 cm long, which serve as the negative electrodes, were hung on either side of the line of the travelling pieces. The distance between the line and the netting was 25 cm. The conveyer was so designed that pieces, which were hung vertically from the conveyer, rotate on their vertical axises during travelling. The speed of travelling and the rotation were 0.25 m per min. and 1.1 rev. per min,