

Chapter V

Analysis of Results

A total of fifty sets of experiment was carried out with the nine diffusers of three different types as illustrated in Figure 2, 3 and 4. All the so observed data are shown in Table A-1 to Table A-50 in Apendix A.

It should be noted that for the sets with an elevation head of 250 cm. an extra piece of discharge pipe was connected to the original one in order to meet the require length.

The overall coefficient of oxygen transfer, determined by the method of least squares on each experiment is listed in Apendix C referring to the serial number of the identified diffuser.

Other details on the operational condition, power consumed, etc. are also illustrated in Apendix C.

The effect of elevation head on the overall coefficient of oxygen transfer for Diffuser Type I is shown in Figure 6, while Type II & III in Figure 7.

Figure 8 shows the effect of the immersion depth of effluent discharge or exit on the overall oxygen transfer coefficient for Diffuser No. 2, 7 and 9.

Figure 9 also shows the effect of the depth of water on the overall oxygen transfer coefficient for Diffuser No. 8.

Fig. 6 Relationship between overall coefficient of oxygen transfer and elevation head for Diffuser type I

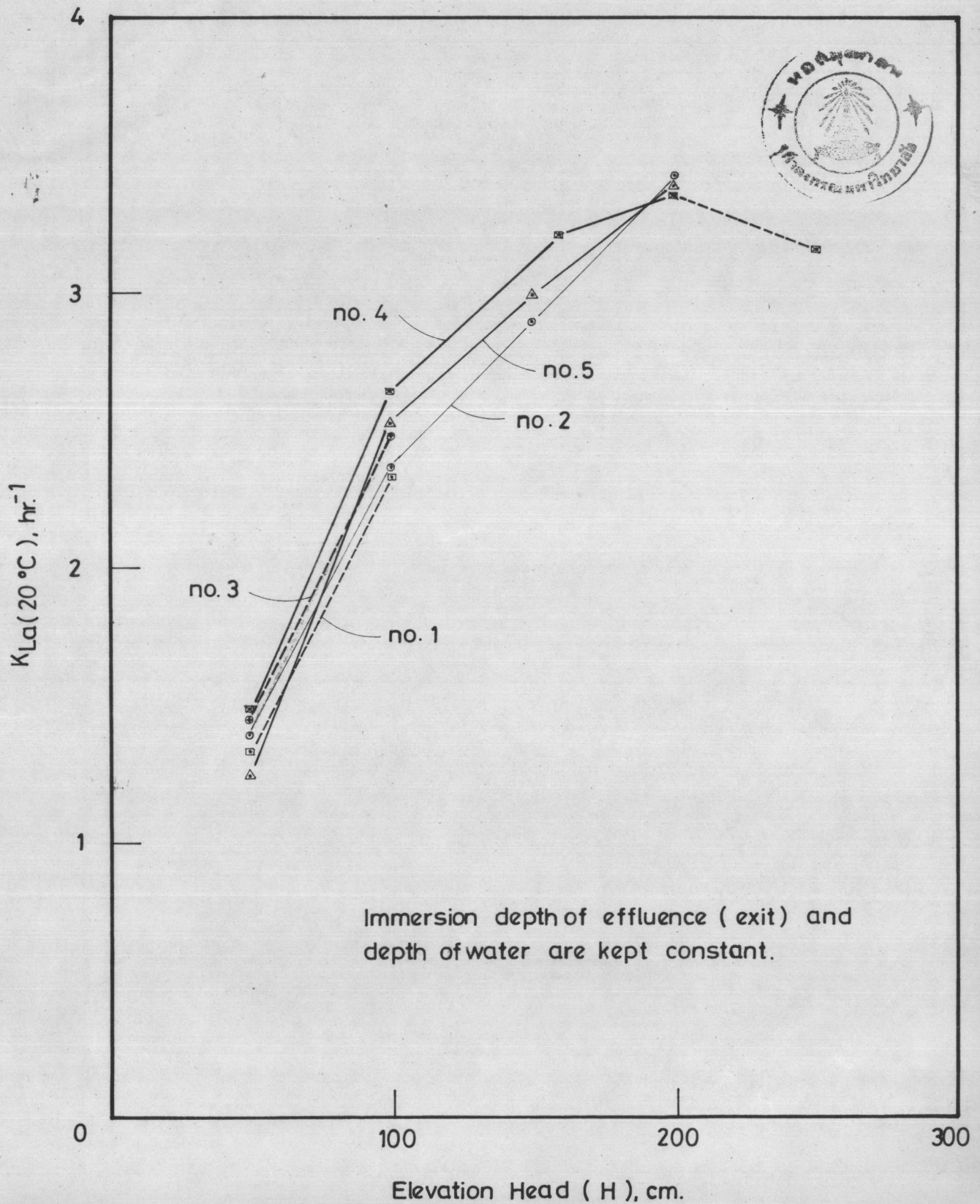
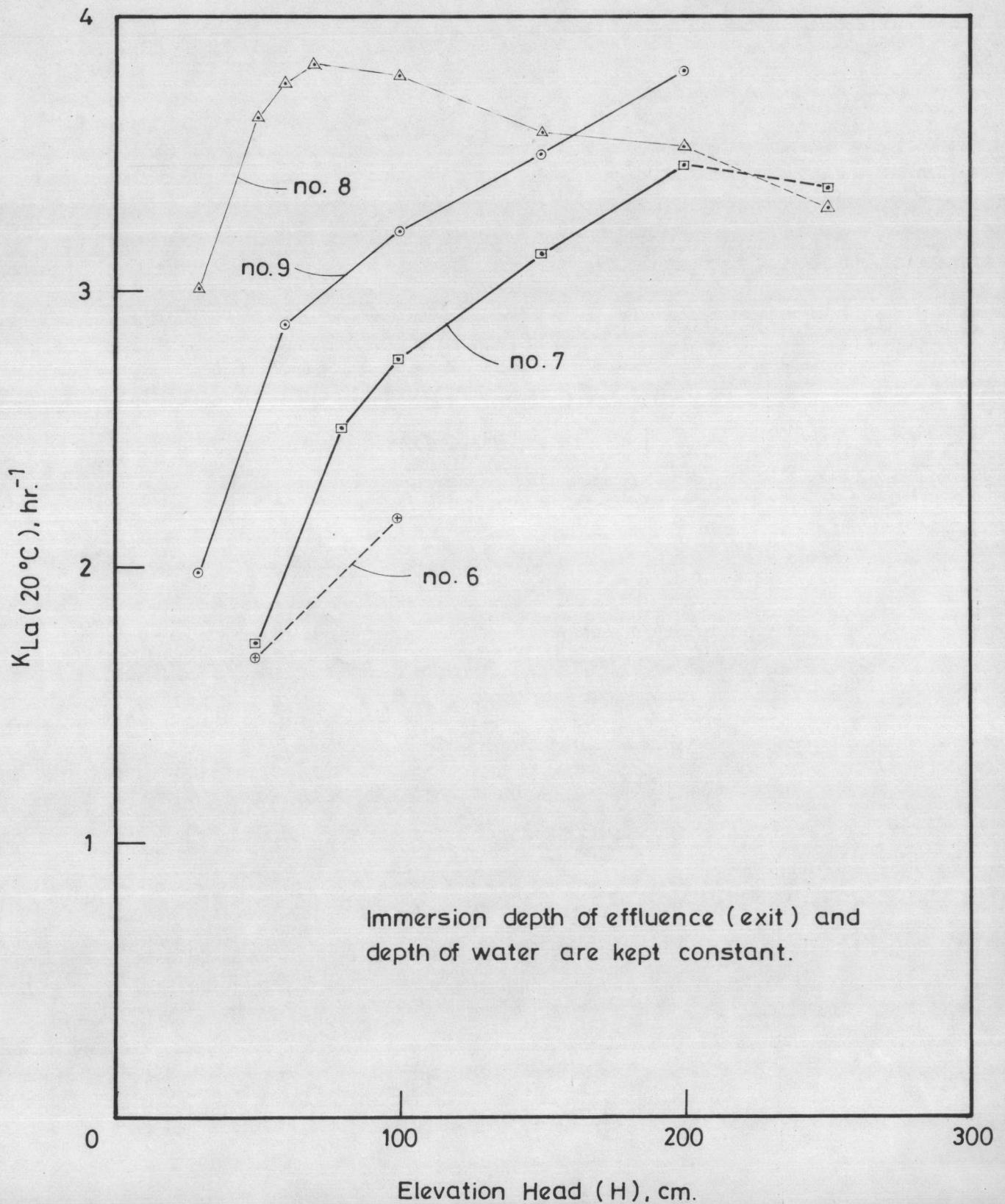




Fig. 7 Relationship between overall coefficient of oxygen transfer and elevation head for Diffuser type II & III



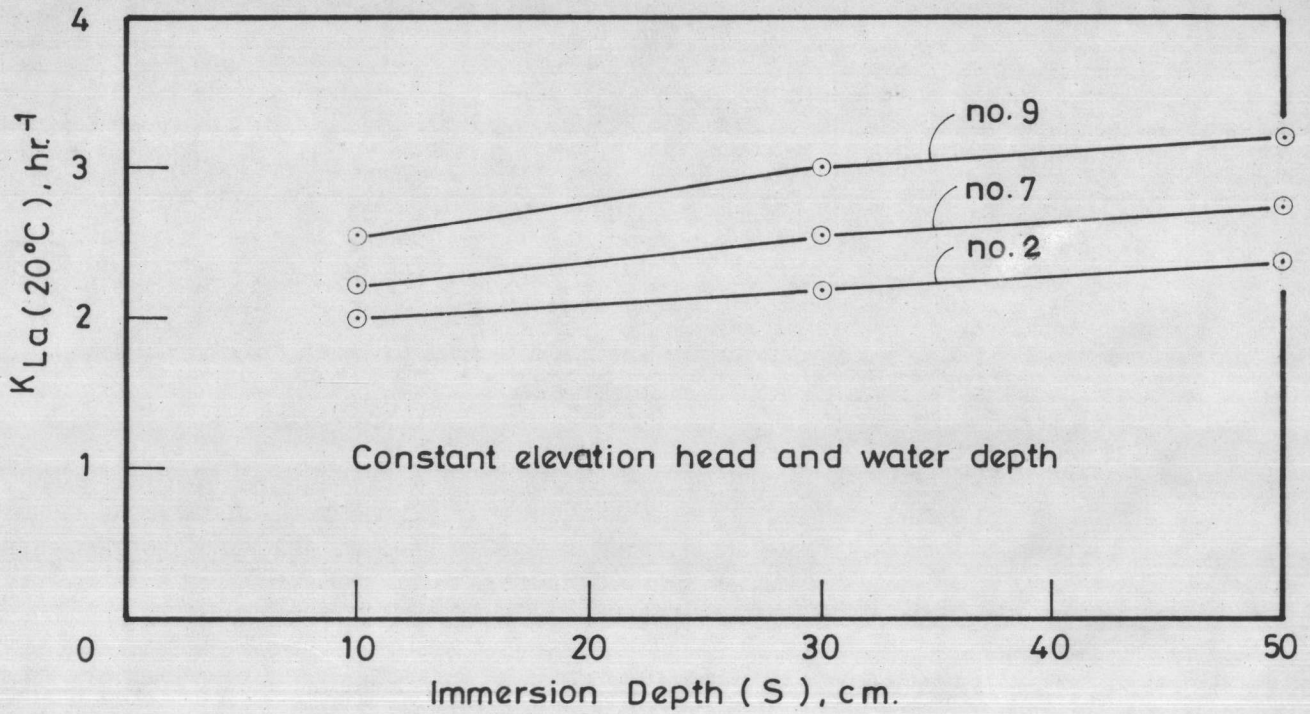


Fig. 8 Relationship between  $K_{La}$  (20°C) and Immersion depth of effluence for indicated diffusers.

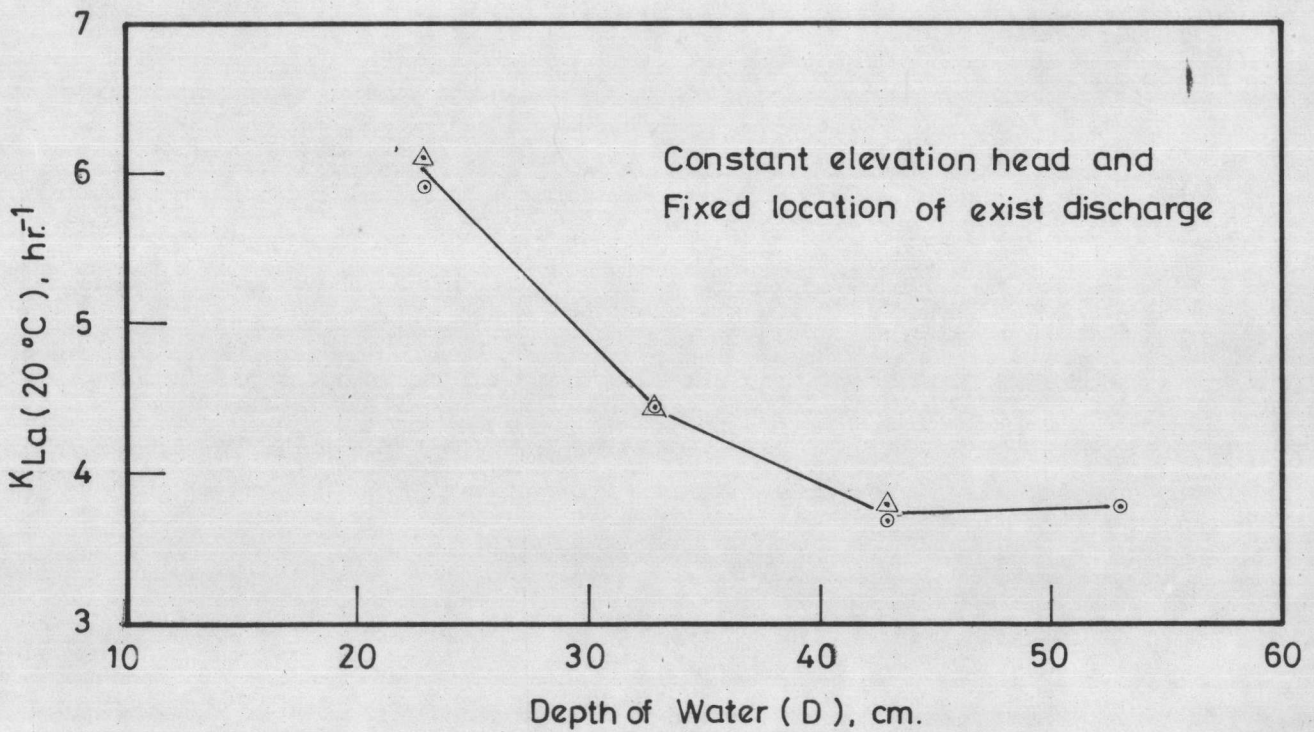


Fig. 9 Relationship between  $K_{La}$  (20°C) and Depth of Water for Diffuser No. 8