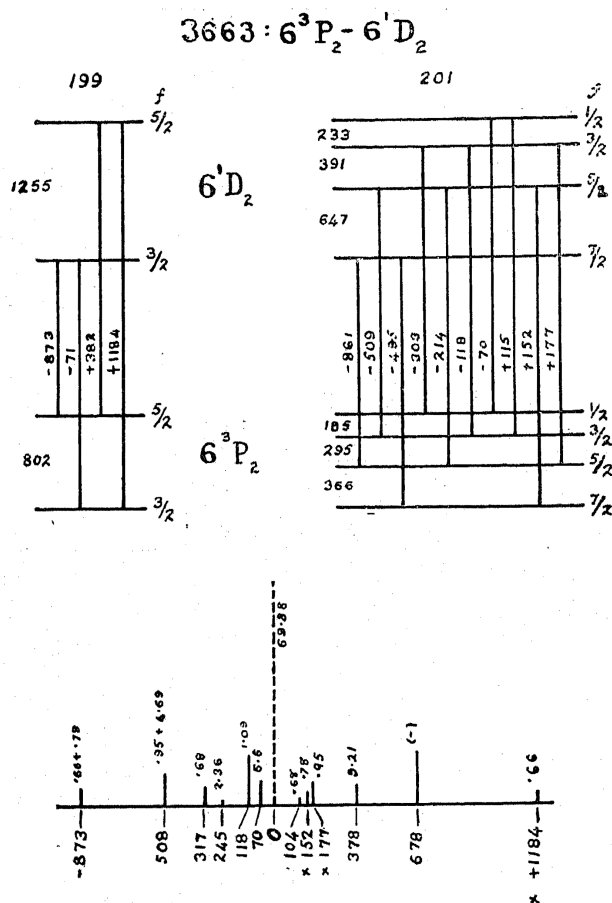


as shown in Fig. 1 on the basis of the scheme proposed by the author and T. G. Srinivasa Iyengar. This scheme is also able to account for the structure of 5026 ($6^1P_1 - 8^3S_1$) given by Venkatesachar and Sibaiya¹⁰ as shown in Fig. 2. The scheme of Schüler and Jones cannot be reconciled with this structure. Fig. 3 shows the structure of



3663 ($6^3P_2 - 6^1D_2$) deduced from that of the 6^1D_2 level given in the previous paper.² Unfortunately the diagram given in that paper for 3663 shows the levels upside down owing to inadvertence in copying from the rough manuscript. The positions of the satellites now given agree with the measurements of Nagaoka although the intensities are not so well explained. The structure deduced by Schüler and Jones is markedly different from that given by Nagaoka.

It is remarkable that the structures of some lines in regard to which earlier observers were in substantial agreement differ materially from the results of later investigators. The situation is equally puzzling in

¹⁰ *Naturwiss.*, **19**, 1041, 1931.

the case of lead. Thus Wali Mohammad and Sharma¹¹ obtain results exactly coinciding with those of previous observers like Janicki while in many cases the results of Kopfermann¹² and the similar ones of Rose and Granath¹³ differ markedly from these. It is not easy to make self-reversal and absorption alone responsible for such contrary results. Unless the causes of this discrepancy between the results of equally reliable observers are found out and allowed for, the problem of hyperfine structure will remain without a unique solution.

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Size of the Liquid Drops on the Same Liquid Surface.

In the previous papers the author has studied the general accounts of the liquid drops on the same liquid surface,¹⁴ the effect of the surrounding medium on the life of liquid drops¹⁵ and water as a suitable liquid for the formation of such drops.¹⁶ Now the author has studied the factors which increase their size and has arrived at the following conclusions:—

1. That the size of the floating drops depends upon two factors, *viz.*, (a) the diameter of the burette and (b) the surface tension of the mother liquid.
2. That the size of the floating drops is independent of (a) the viscosity and (b) the density of the mother liquid.
3. That the surface tension of the mother liquid affects the size of the primary as well as the secondary drops formed by any method.
4. That the diameter of the jet affects the size of only the primary drops formed by burette method. It neither affects the primary drops formed by any other method nor the secondary drops formed by any method.

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Suket State, India,
September 12, 1932.

¹¹ *Phil. Mag.*, **12**, 1106, 1931.

¹² *Zs. f. Phys.*, **75**, 363, 1932.

¹³ *Phys. Rev.*, **39**, 1017, 1932.

¹⁴ J. B. Seth, C. Ananda and L. D. Mahajan, "Liquid Drops on the Same Liquid Surface," *Phil. Mag.*, **7**, pp. 247-253.

¹⁵ L. D. Mahajan, "The effect of the surrounding medium on the life of liquid drops," *Phil. Mag.*, **10**, pp. 383-386.

¹⁶ L. D. Mahajan, "Liquid Drops on the Same Liquid Surface," *Nature*, **126**, p. 761; **127**, p. 70.