compare the specimens from Israel with four paratypes of *U. moluccensis* lent me from the collection of the Rijksmuseum van Natuurlijke Historie, Leyden, and I can find no differences between them. Vomerine teeth, stated to characterize the genus *Upeneus*[3], are absent from both samples in specimens more than 65 mm. long, and this has led authors[2] to place it in another genus, in spite of the fact that the presence of palatine teeth should exclude it from *Mulloidichthys*.

Unlike other Indo-Pacific species recently recognized in the Mediterranean, *U. moluccensis* has never been recorded from the Red Sea; but if, as seems probable, it came through the Suez Canal, it must surely occur there.

A systematic analysis of these species will be published elsewhere. I am indebted to Dr. E. Trewavas for reading this manuscript and to Mr. N. B. Marshall and Dr. M. Boeseman for their help in securing a loan of the paratypes of *U. moluccensis*.

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Aeration of Coliform Cultures

Periodically, cultures of coliform organisms in simple synthetic medium (glucose–phosphate–ammonium salt) have failed to grow when aerated in this laboratory, contrary to experience in other towns. This culminated in a few weeks when such cultures refused to grow at all, so that the possible presence of poisons in the air was suspected. Consequently the air intake of the compressor was placed outside the laboratory buildings. The phenomenon persisted during the daylight hours but was eliminated at night time.

Two points now emerged: at the time, this area was suffering excessive and almost continuous rainfall, and the air intake was just above a mass of actively growing plants. This suggested that the trouble might be due to carbon dioxide deficiency in the atmosphere, which was being rectified by the metabolism of the plants when it was dark. Chemical investigation showed that in fact there was about five times as much carbon dioxide in this air at night as during the day, and about twice as much as in air taken from the laboratory during the day.

Various workers have noted the need for carbon dioxide by these organisms, probably to permit the formation of the C_4 dicarboxylic acids[1–5]. The addition of chemically prepared carbon dioxide or of extremely small quantities of succinic acid eliminated the phenomenon. From the work of Dagley and Hinshelwood[2], it can be calculated that a very small gas flame produces sufficient carbon dioxide to meet the requirements of a considerable number of cultures.

The air intake was now transferred to the space below a gas-operated incubator to ensure a sufficiency of carbon dioxide. The gas sucked in was purified by spraying as an oil–air emulsion, filtering and then passing through an efficient washing system filled with strong chromic acid. This removed dust, alkaline vapours and oxidized volatile substances. The gas was washed efficiently with bicarbonate solution to absorb all acid vapours and replace them with carbon dioxide. It then passed through a bacteriological filter. The use of this air has eliminated the trouble completely.

The importance of adequate carbon dioxide has since been repeatedly emphasized: many phenomena being studied have been much more reproducible and in many cases the intrusion of lag phenomena eliminated. Such an example is the effect of phenol in low concentration on one organism. Originally there was a progressive increase in observable lag and of the mean generation time with increase of phenol concentration; but with the new air supply no lag phenomena are observed.

There may be many instances elsewhere where fluctuating carbon dioxide content of the atmosphere and/or a bare average sufficiency are producing artefacts: here the problem became acute because of a prevailing wind blowing from the open sea past an extremely well-ventilated coastal laboratory.

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Resistance to Lymphomatosis in the Fowl in Relation to Reproduction

Over the past twenty years, the feasibility of breeding strains of fowls in which mortality from lymphomatosis is reduced to negligible levels has been demonstrated[1,2]. Many poultry breeders are now developing resistant strains. If families resistant to this disease do not hatch as well as families that are susceptible, as Coles and Underwood have stated[3], the desirability of attempting to develop resistant stock may seem dubious. Accordingly, we have examined our records for the past six years for evidence of any such relationship.

In so doing, we have compared (as did Coles and Underwood) families of full sisters showing one or more deaths from lymphomatosis with families in which no females died of that disease during our test period, which is from 42 to 500 days of age. Since, in a later exposition of the same data[4], both fertility and hatchability of resistant families were said to be lower than in susceptible families, we have considered both these important factors which influence the efficiency of reproduction.

Records for matings of proved sires in our *K*-resistant strain of White Leghorns (Table 1) show the variation from year to year that is inevitable with relatively small numbers. Over the whole period of six years, in families free of lymphomatosis, fertility (of their dams) was lower by 1·9 per cent; but