where the unit of myokinase activity is defined as that required to bring about the formation of 1 μmole ATP/h under the conditions of the spectrophotometric assay. So far, myokinase activity has been found in all the organisms tested. These comprise one yeast, one mould and several bacteria of diverse metabolic and morphological types, including both flagellated and non-flagellated species. All the extracts, with the exception of those obtained from *Clostridium butyricum*, *Corynebacterium hofmanii*, *Proteus vulgaris* and *Rhodospirillum rubrum*, were also tested qualitatively by the chromatographic technique and in each case myokinase activity confirmed.

For an accurate comparison of the activities of different organisms it would be necessary to establish that a quantitative extraction had been achieved. This has not been done in the present case, but bearing in mind that myokinase is a relatively stable enzyme, at least in animal tissues, certain general conclusions seem justified. The main conclusion to be drawn from these experiments is that myokinase activity is widely distributed in microorganisms as well as in animal tissues. Furthermore, the myokinase contents of the whole organisms are of the same order of magnitude as those observed in animal tissues other than muscle (*cf.* OLIVER[6]). In addition, the relatively high activity found in *T. denitrificans* is considered to be significant and may possibly be connected with the fact that this organism is a strict chemoautotroph, in contrast to the other species examined.

Biochemistry Department, Sheffield University (England) I. T. OLIVER

Agricultural Research Council Unit for Microbiology, Sheffield University (England) J. L. PEEL

[1] S. P. COLOWICK AND H. M. KALCKAR, *J. Biol. Chem.*, 148 (1943) 117.
[2] H. M. KALCKAR AND H. KLENOW, *Ann. Rev. Biochem.*, 23 (1954) 527.
[3] A. V. KOTEL'NIKOVA, *Compt. rend. acad. sci. U.R.S.S.*, 69 (1949) 837; *C. A.*, 44 (1950) 4528.
[4] A. KORNBERG AND W. E. PRICER, *J. Biol. Chem.*, 193 (1951) 481.
[5] V. A. KNIVETT, *Biochem. J.*, 56 (1954) 602.
[6] I. T. OLIVER, *Biochem. J.*, 61 (1955) 116.
[7] D. E. HUGHES, *Brit. J. Exptl. Path.*, 32 (1951) 97.
[8] H. A. KREBS AND R. HEMS, *Biochim. Biophys. Acta*, 12 (1953) 172.
[9] S. R. ELSDEN, F. M. C. GILCHRIST, D. LEWIS AND B. E. VOLCANI, *Biochem. J.*, 49 (1951) lxix.
[10] R. MARKHAM AND J. D. SMITH, *Biochem. J.*, 45 (1949) 294.

Received January 11th, 1956

The absolute value for the electrophoretic mobility of *Aerobacter aerogenes*

The calibration of a modified micro-electrophoresis apparatus (to be described elsewhere) with human erythrocytes in *M*/15 mixed phosphate buffer solution has resulted in a revised value for the absolute electrophoretic mobility of *Aerobacter aerogenes*. The absolute value, determined using both the original Abramson type and the modified apparatus, in *M*/150 mixed phosphate buffer solution (pH = 7.00, ionic strength = 0.013) is now found to be $2.37 \pm 0.04 \cdot 10^{-4}$ cm/sec/volt/cm, corresponding to a ζ-potential of -0.029 volts and a charge density of 3060 e.s.u., (compare BARRY AND JAMES[1]).

The error in the previous value was found to be due to a faulty component in the electrical circuit used. In this, the part of the circuit in parallel with the electrophoresis cell, concerned with the measurement of the applied voltage, (although not used for the accurate determination of field strength) was of much lower resistance than previously believed.

The graph showing the variation of the ζ-potential with salt concentration[1], whilst being of the correct shape, will in consequence be displaced along the concentration axis. The general qualitative conclusions regarding the effect of proflavine (JAMES AND BARRY[2]) and crystal violet (LOWICK AND JAMES[3]) on the electrophoretic mobility of this organism are in no way invalidated, since all the observations were made in buffer solutions of constant ionic strength and hence under conditions of identical field strength. The only effect will be the displacement of the histograms toward higher mobility values, the distributions remaining otherwise unchanged.

Acknowledgement. One of us (J.H.B.L.) acknowledges with thanks continued financial support from the British Empire Cancer Campaign.

Department of Chemistry, Chelsea Polytechnic, London (England) J. H. B. LOWICK
D. E. LOVEDAY
A. M. JAMES

[1] P. J. BARRY AND A. M. JAMES, *J. Chem. Soc.*, (1952) 3340.
[2] A. M. JAMES AND P. J. BARRY, *Biochim. Biophys. Acta*, 15 (1954) 186.
[3] J. H. B. LOWICK AND A. M. JAMES, *Biochim. Biophys. Acta*, 17 (1955) 424.

Received January 11th, 1956