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PHYTOCHEMISTRY

INSTRUCTIONS TO AUTHORS—1977

1. INTRODUCTION

1.1 PHYTOCHEMISTRY is intended to cover research on all aspects of pure and applied plant biochemistry, especially that which leads to a deeper understanding of the factors underlying the growth, development and differentiation of plants and the chemistry of plant products. The Journal is divided into five sections, *Biochemistry*, *Biosynthesis*, *Chemotaxonomy*, *Phytochemistry* and *Short Reports*. Within each section, like papers are, as far as possible, grouped together according to subject matter.

2. SUBMISSION OF CONTRIBUTIONS

2.1 Contributions must be original and **must not** have been submitted simultaneously elsewhere. If all or part of the results have been reported previously in any form whatsoever, a copy of that publication must accompany the manuscript on submission. Papers will only be accepted if they fall within the scope of the Journal as outlined in paragraph 1.1; those which deal only with either analytical methods or the synthesis of organic compounds will not be published.

2.2 Contributions will be accepted in English, French or German, either as Full Papers, or as Short Reports. Reviews which survey important areas of plant biochemistry will also be considered, but Authors must consult the Editors before preparing such articles. The contents of papers are the sole responsibility of the Authors, and publication does not imply the concurrence of Editors or Publishers.

2.3 All manuscripts of contributions should be submitted to Prof. J. B. HARBORNE, Department of Botany, The University of Reading, Whiteknights, Reading RG6 2AS, Berkshire, England.

2.4 Preliminary communications are not published in the Journal. They may, however, to submitted to the editors of our sister journal *Tetrahedron Letters*.

3. EDITORIAL AUTHORITY

The Editors reserve the right to make alterations in manuscripts submitted for publication. Such alterations will be made if manuscripts do not conform with accepted scientific standards or if they contain matter which in the opinion of the Editors is unnecessarily verbose or repetitive. If Authors wish to see such alterations before their paper is accepted for press, they **must** so indicate when their manuscript is submitted. Alterations may be queried at the proof stage, but this will inevitably delay publication and **should only be done if the scientific meaning has been seriously upset**. Where papers need extensive alteration, they will be returned to the Authors for checking and re-typing. Unless such papers are returned to the Editors within one month, they will be deemed to be new and given a revised date of receipt.

4. FORM OF CONTRIBUTIONS

4.1 All manuscripts intended for publication must be submitted *in duplicate* on good quality paper typed throughout with double-spacing between lines, with adequate margins (4 cm) and liberal space at the top and bottom of each page.

FULL AND SHORT PAPERS

4.2.1 The content of manuscripts intended as Full Papers must be arranged as follows: (1) a *Title*; (2) authors name(s) and address(es); (3) a *Key Word Index*; (4) an *Abstract*, in which the essential contents are briefly stated; (5) the *Introduction*, the *Results* and the *Discussion*; although these three sections may be separated by headings, they should, as far as possible, form one continuous narrative and only include such details which are essential to the argument presented; (6) the *Experimental* which should include brief details of the methods used such that a competent operator may repeat the work; (7) *Acknowledgements*; (8) *Figures*, *Formulae*, *Tables* and *References*.

4.2.2 *Titles* must be as brief as possible consistent with clarity and should not exceed ten words in length. When the title is longer than five words, Authors should also supply a running title. Uninformative phrases such as "Chemical examination of", "Studies on", etc., will be deleted. The taxonomic authority after a plant name must be omitted from the title. If a paper is part of a series, this must not be given in the heading, but referred to in a footnote in the form: *Part 9 in the series "The Alkaloids of *Papaver somniferum*" followed by a reference to the previous part.

4.2.3 *Authors names*. Each author should identify himself with one forename, initials of other forenames and his surname. This is to enable more exact computerized indexing and information retrieval.

4.2.4 *Key Word Index*. Authors must give from three to ten "key words" or phrases which identify the most important subjects covered by the paper. These are to assist in the computerized retrieval of the information contained therein. They should be placed at the beginning of the manuscript in the following order: name of plant species examined (Latin binomial); plant family; (common epithet, where applicable); type of investigation; class of compound; compound(s). For example; **Key Word Index**—*Musa sapientum*; Musaceae; banana; biosynthesis; phytosterols; cycloeucalenol.

4.2.5 *Abstracts*. Abstracts must be in English and briefly describe the results obtained and conclusions reached, *not* the methods used, speculations on any other

matter. They are not expected to be a complete summary but only an outline of the main findings.

4.2.6 *Results.* Papers must give only those essential results which have led the authors to a definite conclusion, speculative or otherwise. Much illustrative data, which used to be required as supporting evidence, can now be taken for granted and quoted in abbreviated form. For example, it is sufficient to quote the λ_{max} of a UV curve rather than give the whole curve itself. Long historical introductions, speculative discussions not related to the conclusions, unnecessary diagrams and figures and excessive experimental detail will usually be regarded as extraneous and be eliminated since they occupy space which prevents more worthwhile matter from being published.

4.2.7 *Figures, diagrams, formulae, and tables of* the following type generally will **not** be accepted for publication: (1) diagrams or photographs of chromatograms (both PC and TLC), electrophoretic separations, or recorder traces of GLC data which are given *merely* to prove identification (much of this data can either be left out altogether or inserted in the text or in tabular form); (2) straight-line graphs (if necessary, the data for a single point or of a constant (e.g. K_m) derived from the graph can be inserted in the text for illustrative purposes); (3) generalized pH and temperature–denaturation curves of enzymes; (4) illustrations of IR, UV, NMR or MS (ν_{max}, λ_{max}, δ values or m/e values can be quoted in the text); (5) flow sheets illustrating isolation of compounds; (6) expectable MS fragmentation patterns; (7) formulae of well-known compounds or reaction schemes; (8) tables either giving single values for each parameter which could be easily quoted in the text or repeating data shown elsewhere.

4.2.8 *Figures, schemes and chemical formulae* for publication which do not come in the above categories should be drawn on separate sheets and *not* included in the typescript. Chemical formulae must be made absolutely clear; printers are not chemists and much delay is caused by sloppy drawing. Aromatic rings must be drawn with alternate double bonds and conformation of single bonds shown by thickened or dashed lines according to convention. Structures should be numbered consecutively in *arabic* numerals. Where possible, authors should produce their chemical formulae in a form that can be reproduced directly without redrawing. Figures and schemes should first be drawn on graph paper and then transferred to separate sheets of good quality tracing paper using black waterproof ink. They should be drawn twice the size finally required; that is not more than 12 cm wide and 30 cm high. Lettering should be in initial capital—small *sans serif* style and drawn using any suitable stencil or added from a transfer sheet. The letters should be 3–4 mm high with a line thickness of 0.3–0.5 mm. Lines on graphs should be 0.5–0.6 mm thick and should not pass through the symbols used as datum points. The symbols used and their size for half reduction are ○ ● △ ▲ □ ■ × +. All graphs must have a border all round 0.3–0.4 mm thick, and the scales, which must be clearly shown, should be marked outside this. Each curve in a graph must be clearly identified, either by a caption within the border or in the descriptive legend. Each scheme and graph must be clearly identified with the authors name, abbreviated title of the paper and the figure number. Descriptive legends which must include a title, should be collected together on a separate sheet.

4.2.9 *Half-tone photographs* can only be submitted by prior arrangement with the Editors. They must have good contrast and be not more than 25 cm wide and not more than 30 cm high.

4.2.10 *Tables* must be typed on separate sheets and arranged to be viewed vertically. They must be so constructed as to be intelligible without reference to the text. Every table must have a title and each column must be provided with an explanatory heading. Results should be cited only to the degree of accuracy justified on the basis of the errors of the method and **usually** only to three significant figures. Units must always be clearly indicated and chosen so as to avoid excessively high (> 1000) or low (< 0.001) values. The figure zero should precede the decimal point for all numbers below one (e.g. 0.1).

4.2.11 *References* must be numbered consecutively in the text and should be typed in order on a separate sheet. Only essential references should be included and these should be given in the correct format, i.e. the names of the Authors, followed by their initials in sequence; the year of publication in parenthesis; the title of the journal (abbreviated in accordance with *Chemical Abstracts*) and underlined once; the volume number, squiggly line underneath; and the first page number.

4.2.12 *Experimental.* The Experimental must be concise and extensive use of abbreviations is essential (see para 5.3.1). Experimental details which must be omitted unless novel procedures are involved, are: (1) method of preparation of common chemical derivatives, such as acetates, methyl ethers, etc; (2) excessive details of separation of compounds by chromatography, e.g. preparation of columns, TLC plates, column and fraction size; (3) commercial source of chemicals and biochemicals, unless it is known that materials from different manufacturers vary critically in their properties; (4) types of instruments used, unless not widely available or have novel features.

Subtitles in the Experimental should be italicized (underlined) and inserted as *part* of the first line of the text to which they apply.

DOCUMENTATION OF PLANT MATERIALS

4.2.13 In **all cases** when papers contain references to whole plants of parts therefrom, to crude drugs, or to any other plant material from which identifiable chemical substances have been obtained for the first time, they must also include, when at all possible, reference to voucher specimen(s) of the plants or other material examined. In any case, authors must quote the name and address of the authority who undertook the identification of each non-cultivated plant investigated. Such specimens should be deposited in a major regional herbarium where the collection is maintained by state or private institution and which permits the loan of such materials.

SHORT REPORTS

4.3.1 This section of the Journal is provided for concise reports representing significant contributions to scientific knowledge which can be adequately presented in about two printed pages (i.e. six to eight pages of mss). They should be as well documented and as accurate as FULL papers. Short Reports on all aspects of pure and applied plant biochemistry will be considered.

Short reports should generally follow the style of full papers, although the sectioning can often be omitted, e.g.

the introduction, results and discussion being run on as a single narrative. Abstracts should only be included if they contain significant information not already present in Title and Key Word Index.

It should be noted that the section on Phytochemical Reports (either full or tabulated) has now been discontinued. Reports of known compounds, however rare, from new plant sources will not generally be accepted unless they have real chemotaxonomic or other biological significance.

5. OTHER MATTERS

PROOFS AND REPRINTS

5.1.1 *Proofs* will be sent to Authors for checking before publication. Proofs of text, and illustrations which cannot be set in type, will be despatched together. Proofs are normally sent to the first-named Author at the address given at the head of the manuscript. Authors **must** indicate on the manuscript any other arrangement required. Corrections to the proof must be marked clearly. Any substantial alterations other than printer's errors will be charged to the Author(s). Two reprint order forms will accompany the proofs and one copy should be returned along with them. It should be noted that proof corrections are subject to Editorial control. Proofs not returned after six weeks may be corrected by the Editors without further consultation with Author(s).

5.1.2 *Errata and addenda* to published articles will, **at the discretion of the Editors**, be incorporated in the June and December issues of the Journal.

NOMENCLATURE

5.2.1 *Chemical nomenclature*, abbreviations and sym- must follow IUPAC rules. Authors should avoid coining new trivial names but if they do so they should give reasons for their choice and also give the systematic name. Radioactive substances should be written with the correct chemical name of the compound followed by the position and type of radioatom (^{14}C, ^{3}H or T, ^{32}P, ^{35}S, etc.) placed in square brackets after, e.g. L-serine-[U-^{14}C], D-glucose-[3-^{3}H], colchicine-[ring ^{14}C methoxyl-^{3}H], adenosine-5′-triphosphate-[γ-^{32}P].

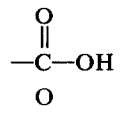
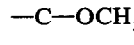
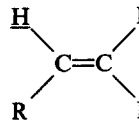
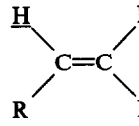
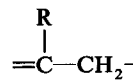
5.2.2 *Terms in biological chemistry* should follow; (a) the *Instructions to Authors of the Biochemical Journal* (revised annually), or the notes given at the beginning of each number of the *Journal of Biological Chemistry*; (b) the IUPAC rules on biological chemistry nomenclature. Where there is any difference in recommendations, the Editors will follow the latest publication.

5.2.3 *Specific names* (genus, species, authority for the binomial) of all experimental plants must be given at first mention according to the *Index Kewensis* or similar authority, and preferably be in the form recommended by the *International Code of Botanical Nomenclature*, Named varieties of cultivars are given as, e.g. *Lactuca sativa* cv Grand Rapids.

5.2.4 *Analytical results* for compounds which have been adequately described in the literature must be given in the form: (Found: C, 62.9; H, 5.4. Calc. for $C_{13}H_{13}O_4N$: C, 63.2; H, 5.3 %). *New compounds* must be indicated by giving analytical results in the form: (Found: C, 62.9; H, 5.4. $C_{13}H_{13}O_4N$ requires: C, 63.2; H, 5.3 %).

5.2.5 *Weights and linear measurements* must be expressed in metric units; other measurements should be given in analogous units (e.g. lx, not ft-c). Lists of SI units, with their equivalents, are given in the Royal Society publication *Metrication in Scientific Journals* (1968). All non-standard abbreviations must be defined on first mention.

5.2.6 *PMR data* should indicate the frequency of the instrument used (e.g. 60 MHz) the solvent used (e.g. $CDCl_3$) and the internal standard (e.g. TMS). Chemical shifts should be quoted in δ units relative to TMS ($\delta = 0$) and the data given in the form of the value of the shift followed in brackets by number of hydrogens involved, whether the signal is a singlet, *s*, doublet, *d*, triplet, *t*, quadruplet, *q*, or multiplet, *m* the coupling constant *J*, with subscripts to indicate the atoms involved where necessary, and its value in Hz, and the carbon atom or atoms (preferably numbered according to IUPAC rules) to which the hydrogen atoms are attached. Where the protons are attached to specific unnumbered groups, these should be written on a single line where possible as in the examples shown below:

—COOH	not	
—COOMe	not	
trans R—CH=CH—R′	not	
cis R—CH=CH—R′	not	
=CH—CH_2—COR′	not	

For example: PMR (60 M Hz, $CDCl_3$): δ 0.68 (3H, *s*, C-18), 0.88 (6H, *d*, J = 6 Hz, C-26 and C-27), 0.90 (3H, *d*, J = 5 Hz, C-21), 1.20 (3H, *s*, C-19), 4.21 (1H, *m*, $W_{\frac{1}{2}}$ = 18 Hz, C-3), 4.34 (1H, *q*, $J_{6\alpha 7\alpha}$ = 4.5 Hz, $J_{6\alpha 7\beta}$ = 2 Hz, C-6), 5.66 (1H, *s*, C-4).

5.2.7 *MS data* should only be presented in full if they have not been published separately elsewhere by the Authors or others, in which case only the relevant references should be quoted. In other cases, low resolution spectra should indicate the method used to obtain the data (probe, GC–MS, etc.), the accelerating voltage used (e.g. 70 eV) and then give the data *only* for the diagnostically important ions expressed in the terms of *m/e*, the character of the ion in relation to the parent ion (e.g. M^+-43 or M^+-acetate), and the intensity relative to the major ion (=100); metastables should be indicated by value and transition (e.g. m*363 → 349). For example: MS (probe) 70 eV *m/e* (rel. int.): 282 [M^+] (10), 251 [M^+-31; 25], etc. High resolution spectra can be given in more detail if necessary for M^+ and the more important fragment ions.

ABBREVIATIONS

5.3.1 Trivial names for enzymes can be used provided that reference is made at the beginning of the manuscript to Enzyme Commission (E.C.) number when one has been allocated [see *Enzyme Nomenclature*, Elsevier, New York (1965)].

5.3.2 *Examples of accepted abbreviations.* (See Instructions to Authors—1975 p. 6). (Note that the stop is only rarely used after abbreviations.) French and German Authors should use equivalent abbreviations where possible.

6. THE PUBLISHING PROCESS

6.1 *Refereeing and editing*

Each submitted manuscript is considered by at least one expert Referee. Where necessary, the Referee's observations are passed to the Author for comment, but it should be noted that the Editors take the sole responsibility for deciding whether or not a manuscript is suitable for publication in *Phytochemistry*. Manuscripts which are deemed inappropriate for *Phytochemistry* are always considered by at least two Editors and clear reasons for rejection are given to the Authors. Accepted manuscripts are always edited by an Executive Editor (see para 3) who takes into account, where necessary, both Referee's and Author's comments.

6.2 *Publication*

Under normal circumstances, Refereeing takes 4–6 weeks, Editing 2 weeks, Proof production 6–8 weeks and the final stage of production and binding 4–6 weeks. The overall production time from receipt to publication is then 5 months.

ABBREVIATIONS

Weight: wt, pg, ng, μg, mg, g, kg
Molecular weight: MW
Dry weight: dry wt; fresh weight: fr. wt
Volume: l. (litre), μl, ml
Length: nm, μm, mm, cm, m
Time: sec, min, hr, day, week, month, yr
Temperature: ° (without centigrade), mp, mps, mmp, bp
Force due to gravity (centrifugation): *g*; rpm (revolutions/min)
Electricity: V, mA, eV
Concentrations: ppm (never ppb!), μM, mM, M, %, mol
Numbers: e.g. 1, 10, 100, 1000, 10000; per or/not $^{-1}$
About, approximately: *ca*
Paper chromatography: PC
Thin-layer chromatography: TLC, R_f
Preparative-layer chromatography: PLC
High pressure liquid chromatography: HPLC
Gas–liquid chromatography: GLC, preparative GLC, RR_t (relative retention time), R_I (Kovat's retention index), ECL (equivalent chain length—term frequently used in fatty acid work).
Gas–liquid chromatography with radioactive monitoring: GC–RC (not radio–GLC or GLRC)
Ultra-violet spectrophotometry: UV, A (absorbance not OD-optical density)
Infra-red spectrophotometry: IR
Optical rotatory dispersion: ORD
Circular dichroism: CD
Nuclear magnetic resonance: PMR ^{13}C NMR, Hz, δ
Electron spin resonance: ESR
Mass spectrometry: MS, *m/e*, M^+ (molecular ion, parent ion)
Gas–liquid chrotography–mass spectrometry: GC–MS
Trimethylsilyl derivative: TMSi (TMS cannot be used as this refers to internal standard tetramethylsilane used in PMR)
Gibberellic acid: GA
Indole-3-acetic acid: IAA
L-Dihydroxyphenylalanine: DOPA
Abscisic acid: ABA.

Experimental section only

Volume: vol.
Solution: soln
Concentrated (of mineral acids): conc
Concentration: concn
Anhydrous: dry (not anhyd)
Saturated: satd
Aqueous: aq.
Temperature: temp.
Light: lx (lux), lm (lumen)
Pressure: pres, atm pres, red pres, vac. (vacuum), torr, mm Hg, kg/cm^2 (not psi – 1 kg/cm^2 ≡ 15 psi)
Isoelectric point: pI
Precipitate: ppt.
Repetitive manipulations: once, twice, ×3, ×4 etc.
Radioactivity: cpm (counts per min), dpm (disintegrations per min), Ci (curie), sp. act. (specific activity)
Statistics: LSD (least significant difference), s.d. (standard deviation), s.e. (standard error)
Solvent mixtures including chromatographic solvents: abbreviate as follows *n*-BuOH–HOAc–H_2O(4:1:5)
Melting points: uncorr (uncorrected), lit (literature)
Experiment: expt
Flame ionization detector: FID
Electron capture detector: EC
Thermal conductivity detector: TC
Chemicals: abbreviate wherever possible; may not be worth abbreviating in all cases, e.g. urea.

Inorganics e.g.

CO_2, N_2, O_2, H_2, He, H_2O, H_2O_2, NH_3, HCl, H_2SO_4, HNO_3, H_3BO_3 (boric acid), NaCl, $(NH_4)_2SO_4$, NaOH, KOH, $NaIO_4$ (sodium periodate), $KMnO_4$ (potassium permanganate), $MgCl_2$, $Na_2S_2O_3$ (sodium thiosulphate), Na_2SO_3 (sodium sulphite), Na_2SO_4 (sodium sulphate), $KHCO_3$ (potassium bicarbonate), $HClO_4$ (perchloric acid), $SOCl_2$ (thionyl chloride), $AlCl_3$ (aluminium chloride), Na^+, Mg^{2+}, Cl^-, SO_4^{2-}, Pi, PPi (inorganic phosphate), BF_3(boron trifluoride), Tris (buffer), etc., K–Pi buffer (potassium phosphate buffer), $LiAlH_4$ (lithium aluminium hydride), $NaBH_4$ (sodium borohydride).

Organics e.g.

MeOH (methanol), EtOH (ethanol), *n*-BuOH (butanol), PrOH (propanol), *iso*-PrOH (*iso* propanol), PhOH (phenol), petrol (*not* light petroleum or petroleum ether), CCl_4 (carbon tetrachloride), $CHCl_3$ (chloroform), CH_2Cl_2 (methylene chloride), C_6H_6 (benzene), Et_2O (diethyl ether), Me_2CO (acetone), MeCOEt (methyl ethyl ketone), HCO_2H (formic acid), HOAc (acetic acid), EtOAc (ethyl acetate), DMSO (dimethyl sulphoxide). THF (tetrahydrofuran), DMF (dimethylformamide), Py or C_5H_5N (pyridine), Ac_2O (acetic anhydride), NaOMe (sodium methoxide), NaOAc (sodium acetate), CH_2N_2 (diazomethane), TCA (trichloracetic acid), EDTA (ethylenediamine tetraacetic acid), PVP (polyvinylpyrrolidone), TFA (trifluoroacetic acid), DEAE (diethylaminoethyl), CM (carboxymethyl), MAK (methylated albumin-kieselguhr).

PMR solvents and standards: $CDCl_3$ (deuterochloroform), DMSO-d_6 [deuterodimethylsulphoxide not $(CD_3)_2SO$], C_5D_5N (deuteropyridine), D_2O, TMS (tetramethylsilane).

Silylating reagents: BSA (*N,O-bis*-trimethylsilylacetamide—not to be confused with bovine serum albumin!), HMDS (hexamethyldisilazane), TMCS (trimethylchlorosilane).

Biochemicals: consult *Biochemical Journal*.

ATP (etc.), DNA, RNA, *t*RNA, etc., RNase, NAD, NADP, FAD, FMN, GSH, CoA, Ala (alanine), etc., Glc (glucose), etc.

Experimental section

Details required for analytical methods and presenta-

tion of analytical data. Object of the former should be to include the minimum amount of information to enable other workers to repeat the analysis.

Thin-layer chromatography

(a) For analytical TLC, dimensions of the plates can be deleted and it can be assumed that layer thickness is 0.25 mm.

(b) Abbreviate common adsorbents: Si gel (silica gel *not* SiO_2 as this does not describe the material accurately), Al_2O_3 (alumina).

(c) Preparative forms of the technique should include details of (i) layer thickness (PLC only), (ii) amount of sample applied to the layer, (iii) method of detection used to locate the bands and (iv) the solvent used to recover the compounds from the adsorbent after development.

(d) Special forms of TLC on impregnated adsorbents can be abbreviated, e.g. $AgNO_3$–Si gel (1:9), by wt can be assumed.

Gas–liquid chromatography

(a) Omit manufacturer's name.

(b) Detector used should be specified, e.g. dual FID, EC, etc.

(c) Carrier gas and flow rate should be given, e.g. N_2 at 30 ml/min.

(d) Operating conditions, e.g. isothermal 250°, temp programmed 100° to 300° at 2°/min. Details such as injector and detector heater temps should be included.

(e) Packed columns, e.g. 6 m × 3 mm (i.d. measurement only) packed with 1% SE-30 (support material and mesh size can normally be omitted unless unusual, e.g. glass beads, because common ones are diatomaceous and mesh sizes are not critical).

(f) Capillary columns should be specified, e.g. WCOT (wall coated open tubular), SCOT (support coated open tubular). The split ratio used in the injection system and the injection vol for the sample should also be included.

High pressure liquid chromatography

(a) Probably preferable to give manufacturer's name as technique is relatively new and the specifications and performance of available instruments so variable.

(b) Pressure and solvent or solvent gradients used should be given.

(c) Column dimensions (length × i.d. only) and packing used.

(d) Method of detection employed, e.g. hot wire, UV, refractive index.

Visible and ultraviolet spectra

Data should be presented in the established form viz.

$$\lambda_{max}^{EtOH} nm: \ldots, \text{etc.}$$

If ε values are given these should be only as log values and given in brackets, e.g. λ_{max}^{EtOH} nm (log ε): 203 (4.17), ... Where unresolved regions occur these can be indicated as sh (shoulder).

Optical rotation, optical rotary dispersion, circular dichroism. Data should be presented in the established form, viz.

$[\alpha] \ldots$ Value + or − in ° (solvent used; $c\{^{\text{wt of compound in}}_{100\text{ml solvent}}\}$)

D—D-line of Na (or wavelength used)

Example: $[\alpha]_D^{23}$ +32° (EtOH; *c* 0.3210).

ORD curves are usually described as a series of values based on $[\alpha]$ or $[\phi]$ (molecular rotation) at various wavelengths.

CD values may be expressed as molecular ellipticity values $[\theta]$, e.g. $[\theta]_{256}$ +21 780, $[\theta]_{307}$ −16113 or as differential dichoic absorption, e.g. $\Delta\varepsilon_{253}$ −1.0 (MeOH; *c* 0.164).

Infra-red spectra

(a) Data should be presented in the established form, viz.

$$\gamma_{max}^{CHCl_3} cm^{-1}: \ldots, \text{etc.}$$

Absorptions should be expressed only as wavenumbers and structural assignments should be indicated whenever possible in brackets after the relevant wavenumber, e.g. 1740 (>C =O) etc.

(b) The intensity of the absorption bands need not be given and may be included in the Results section. If details are given in the Experimental the following abbreviations should be used: w—weak intensity, m—medium intensity, v—variable intensity, s—strong intensity, vs—very strong intensity.

Biochemistry

(a) *Enzyme activity* is now expressed in units of Katals (symbol kat) which is the amount of activity effecting the conversion of one mol of substrate per sec.

(b) *pH optima* should be given together with pH values for half maximal activity, rather than the pH activity curve as a figure.

(c) *Enzyme inhibitors*—effectiveness should be expressed as Ki or concentration for half maximal activity.

(d) *Optimal temperature* of enzymes should not be given. This should be expressed in terms of "Energy of Activation" and "Energy of Activation for Denaturation".

(e) *Enzyme nomenclature* now given in the Recommendations (1972) of the IUPAC and I.U.B., Elsevier (1973).

(Copies of these instructions can be obtained from the Editors.)