The contiguous primary subsets can be added together to form the hyper subsets.

$$\langle A\ \text{ç} \rangle := (A\ \text{ṇ}) \mid \langle \text{Ṛ k} \rangle \mid \langle E\ \text{ṅ} \rangle \mid \langle AI\ \text{ç} \rangle$$

'Ac' (Pronunciation 'Ach') means union of the first four primary subsets (1, 2, 3 and 4). In other words it is union of the primary subsets from a set (1) whose first symbol is 'A' through a set (4) whose end point is ç 'A ç' means a set of all vowels of the sanskrit language. 'Hl' means union of primary subsets from (5) through (14) and it means the set of all consonants in the sanskrit. Finally 'A l' is the union of all the 14 primary subsets and means the set of all vowels and consonants in the sanskrit.

By the passage of time, 'Al' was used in the sense of All dropping the sense of consonants and vowels. Even the linguistic similarity between the words 'Al' and All is remarkable.

'Gorithm' the second part, is derived from the Sanskrit stem root 'Granth' meaning 'to string together, to compose, to fasten, to put together'. The linguistic variations from GRANTH to GORITH are easily understandable. The connotation of the word ALGOR-ITHM also substantiates perfectly its scientific linguistic basis.

On this background, the explanation offered by the Oxford Dictionary sounds far from convincing.

Yours faithfully,
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26 August 1976

To the Editor
The Computer Journal

Sir

Fast input/output of variable-length arrays in FORTRAN IV

In the *Journal* of August 1976, R. Taylor describes a valuable method of increasing the efficiency of FORTRAN programs produced by some compilers.

It is unfortunate that he suggests that this method 'ought to work with any FORTRAN compiler'. At least one compiler rejects such statements in accordance with section 7.2.1.1.2 of the FORTRAN Standard (ISO, 1972) which states 'The values of the actual arguments that represent array dimensions in the argument list of the reference must be defined prior to calling the subprogram and may not be redefined or undefined during execution of the subprogram.'

There are still good reasons for using non-standard FORTRAN in some situations, but any publication which does not conform to the Standard should state this explicitly.

Yours faithfully,
D. HITCHIN

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2 September 1976

Reference
International Organisation for Standardisation (1972). ISO Recommendation R1539, 'Programming Language FORTRAN'.

Dr. Taylor replies;
Mr. Hitchin is right. However my suggestion at least concentrates the non-standard code. If the data were suitably written, one could observe standards by reading N in the calling, and the partial array in the called, routines. The important point is to try always to transfer continuous blocks of data and avoid looping through subscripted elements.

To the Editor
The Computer Journal

Sir

Symposium on the use of computers in shipboard automation
May I draw your readers' attention to one or two errors of fact and interpretation in the review of the above symposium published in the August 1976 issue of your *Journal*? Firstly, the purpose of the study on which the symposium was based was to explore the *potential* for ship automation systems based on onboard computing facilities and not to survey the progress of ship automation generally, as stated by your reviewer. Secondly, the statement that there was little contribution from equipment manufacturers is incorrect in that U.K. manufacturers were involved in the direction of the work and in fact were joint sponsors. During the course of the study discussions were held with all major U.K. and Scandinavian equipment manufacturers.

The economic case for bridge automation systems derived mainly from predicted reductions in fuel consumption and voyage time rather than enhanced safety. Safety benefits, although important, were assessed conservatively in view of the uncertainties in the data and were credited with a relatively small contribution. Your reviewer's comment on the use of digital techniques for machinery control overlooks the conclusions drawn on potential cost/reliability benefits, and omits mention of operational benefits (difficult to quantify economically at this stage) in the important areas of machinery surveillance and condition monitoring.

Finally, it is fair to point out that in compressing the large amount of material in the original study report into a series of papers of reasonable length, much detailed information had to be omitted, which may account for your reviewer's final comment. Nevertheless it was considered that in summarising the results of what was essentially a feasibility study emphasis should be given to discussion of the many factors influencing viability and future trends, and that an authoritative statement of these matters would be helpful to many whose experience has been only in one or other of the three industries concerned. It is interesting to note that while no U.K. national project has yet been undertaken to promote development in this field, commercial developments since the study was completed in 1973 have generally been following the broad pattern envisaged in the report.

Yours faithfully,
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10 September 1976

Erratum

Formula (3) of the paper 'Hit ratios' by S. J. Waters (this *Journal*, Volume 19, No. 1, February 1976) should read:

$$BHR = 1 - \frac{_{N-B}C_H}{_NC_H} \qquad (3)$$

Similarly in Appendix 3.