The distinction that has always graced the science of physiology arises from its persistent attention to the phenomena of regulation and control; of cooperation among parts and regions in the heterarchy\(^1\) of organ systems; of coordination through all the levels in the hierarchy of catalysts, cells, tissues, organs, organ systems, and individual animals or plants. But modern physiologists may find themselves now discomfited by the prior attempts of past masters of the science to address these lofty themes through comprehensive works with ringing, grandiloquent titles such as: \textit{The Wisdom of the Body}, \textit{The Fitness of the Environment}, \textit{Introduction à l'étude de la médecine expérimentale}, or \textit{Stress Without Distress}. With the apotheosis of molecular biology, these proper and ancient concerns of physiologists have seemed tainted because they did not find the language of mere chemistry sufficient. (But even that most poetic expression from the molecular Alcoran, \textit{Chance and Necessity}, must bridge the gap between molecules and mind with purely literary, not chemical, constructs.)

This new journal is founded on the convictions that the themes of regulation and integration still unify physiology; that precise scientific expression of these concepts requires a language that goes beyond that of conventional chemistry; and that the charge to physiology is to develop the lingua franca for the science of biological systems, to find the hegemony in the hierarchy.

No other journal of physiological science has taken this challenge as its cause. Now that this journal has done so, the question has to be answered: can a journal lead a scientific enterprise? Surely the answer is "No!" A journal can only serve, as well as may be, the needs of its constituency for communication. Whatever accomplished scientists do and think set the trends their journals must follow. The most that the founding editors of this journal can hope for is that their efforts may release preexisting but suppressed desires of physiologists to confront problems of regulation and integration in biological systems more directly than can usually be done in journals tied more closely to the giblets (hearts, lungs, kidneys, brains, pancreases).

The first few issues of this journal necessarily offer papers written for the \textit{American Journal of Physiology} in its old format; the authors did not know the new journal would appear, and many must have been surprised to find that their work was categorized, editorially, as suitable for the aims of this new journal. The result, inevitably, is a potpourri, but a good mix. Eventually, we hope that manuscripts, both theoretical and experimental, which boldly and explicitly attack the problems of heterarchies and hierarchies, of regulation and control, and of complexity will be forthcoming.

Having used the term, I am now obliged to give a warning about "complexity." In my opinion, it is sound practice to suppose that behind every appearance of complexity is simplicity. Science seeks parsimony of description. The problem is to find the concept that converts the confusing illusion into the more comforting reality, which is simpler. Complexity often means only large numbers: one neuron is a simple cell, much less accomplished than an hepatocyte—a network of 1000 neurons is complex. Complexity often means nonlinearity. And sometimes, complexity is merely a euphemism for intellectual slothfulness: "I was too lazy to figure it out, so I emphasized the complexity of the problem, and called for more research." The aim of this journal is to publish work that shows in what way apparently complex physiological systems are simple. (Their reliability itself suggests simplicity, not complexity, if our technological experience is an appropriate guide.)

This journal intends to serve the community of comparative physiologists by offering them a welcome for papers that show how, out of cross-species comparisons, principles of similarity can be established. For example, the speed of dinosaurs, according to Professor R. Alexander of Leeds University (\textit{Nature} 261: 129–130, 1976) can be calculated from the Froude number, which is the same for horses, elephants, birds, ostriches, men and children. Now that is artful comparison! Other journals may emphasize what is different among species, but we wish to do the reverse, even though we know Voltaire praised Zadig for seeing differences where others saw only uniformity. In science the discovery of differences is surely honored, but finally we are after invariance, generalization, similarity, and simplicity. If these are your aims, then this is your journal of physiological science.

\footnote{This useful word was coined by Warren McCulloch to denote a loose association of entities of equal rank, that leads to cooperation, without tight command-control rules in evidence.}

F. Eugene Yates

\textit{Editor}