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COVER

Giant bladder kelp, Macrocystis pyrifera. Marine plants and animals, as well
as other organisms that encounter water stress, utilize a small number of
organic molecules as the dominant intracellular osmolytes ("osmo-
lytes"). Polyhydric alcohols, amino acids and their derivatives, urea,
and methylamines are the major osmolytes in virtually all water-stressed species
except the halophilic bacteria. The selective advantages of these organic
osmolyte systems include the establishment of a cellular microenvironment
compatible with macromolecular structure and function. See page 1214.
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Handcuffing Science

In the mellow last days of August, even as the National Academy of Sciences’ panel on Scientific Communication and National Security rolled up its sleeves to work on its report, our military authorities launched a surprise strike resulting in the suppression of papers scheduled to be read at a major conference on optical instrumentation.

Exercising its oversight of Defense-funded research and development contracts, the military summarily embargoed the presentation of about 100 papers whose titles in a number of instances unwisely included language suggestive of military applications. Although the affair is being smoothed over, there can be little doubt that the continued prospects for open discussion of leading-edge unclassified work now dwell in a no-man’s-land of confusion and disarray, subject to further incursions at any time. The humiliation visited on the sponsoring engineering society is no small matter and one that will be taken to heart by other scientific and engineering organizations. Of more significance, if the raid at San Diego was more than an aberrant case of fractured communications, is an emergent tilt toward reliance upon preemptive powers. Should this be so, we are seeing a new face of the defense research funding system which, over many decades, contributed on an enviable scale to the open search for and sharing of knowledge.

Such a transformation would go far to under the postwar terms of reference that assured comity and stability to relationships between the scientific and technical communities and the defense establishment. If acceptance henceforth of Defense Department support for significant but unclassified work must carry with it implicit or explicit acquiescence in the suppression of disclosure, will scientists and engineers be prepared to travel that road with the specter of ambush no farther distant than the next professional meeting? What conference planner will consider inviting foreign participants lest they be suspected carriers of unclassified tidings to delight an insatiable KGB?

It is not just the unfortunate handling of the affair at San Diego that is unnerving. The timing is no less to be deplored. What has been needed is a breathing spell to reduce the tensions and the controversy of last winter, and an opportunity for balance to be struck between the needs for national security and the requirements for scientific and technical communication. The latest failure of restraint undeniably constitutes a setback to peacemaking efforts.

The relationships between the government and the scientific and technical communities continue to be sorely troubled as the fixation on the “harmorrig” of technology hardens. Even as the pipeline war has unsettled the Atlantic diplomatic consensus, it appears that the crucial domestic consensus between science and national defense is being tested severely. It becomes increasingly clear that a formula must be found to set up an institutional umbrile with authority to see to it that checks and balances are put in place and understood on both sides. It will not do to continue to have a variety of government agencies taking matters into their own hands without coordination, indifferent to the consequences.

There is one other, and quite vital, point that must not be lost sight of. When a proper concern for the national security is burdened by clumsy execution, something is subtracted from the fundamental respect that is owed the necessary goal of safeguarding defense secrets. Once confidence in the judgment and the management of the security process is shaken, its integrity is served badly. The defense authorities have very good reason to know that the scientific community has proved its respect for the national security through three hot wars and a long cold war. That respect must be reciprocated.—William D. Carey