

nologists developed a derived but useful science. However, metallurgists in the 19th century not only used the methods derived from analytical chemistry to select their raw materials and control their operations, but they also kept alive an interest in structure and structure-sensitive properties that were utterly beyond the pale until the 1950's, as far as physicists were concerned. Eventually, however, the local science grew in stature to meet a parental science of ever-widening significance, and boundaries disappeared. Ferrous and nonferrous metallurgy merged within the framework of chemical thermodynamics; then ceramics and other inorganic materials joined them within a new branch of physics, that of the solid state.

Perhaps the next stage will be to treat biological and synthetic organic materials along with inorganic ones, within a broad science that relates everything to hierarchical arrays of electrons, photons, and atomic nuclei, partially disordered and marvellously interwoven.

In both geographical and technological colonies, it is not the development of local independent and competitive systems that marks maturity; rather, it is the merging of all into a worldwide scheme that has regions but little regionalism.

Where are the colonial regions to serve science today? Where they have always been, I think—in the arts, both fine and practical. Where else do psychology, biology, and information theory meet with the physics and chemistry of materials to exploit and so to reveal the nature of complex structure?

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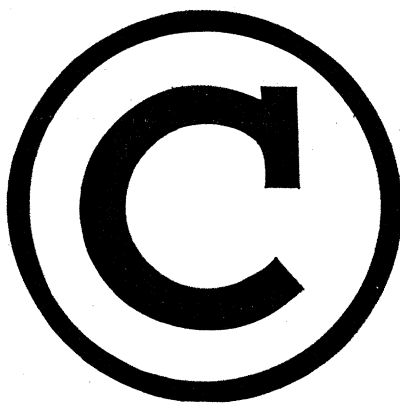
More on the Stoical Cat

Pittenger's cats were not imperturbable, as your caption suggested, but merely unperturbed (Letters, 12 May). Domesticated cats do not twitch at familiar sounds, from which I infer that his subjects lived in very interesting households.

But let him invent a new sound, and he will spot a twitch. Or, of course, an old sound that means danger or food.

A. E. BROWN
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16 JUNE 1967



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