by J. Buettner-Janusch [*Physical Anthropology: A Perspective* (Wiley, New York, 1973), p. 302]; *Galago senegalensis* is reported to leap more than 36 body lengths by J. M. Watson [*Uganda J.* **15**, 193 (1971)].
16. R. I. Pocock, *Proc. Zool. Soc. Lond.* (No. 2), (1922), p. 1171.
17. M. Cartmill, thesis, University of Chicago (1970). The data points yielding these regressions are pictured in *Nature (Lond.)* **232**, 566 (1971).
18. I. T. Diamond and W. C. Hall, *Science* **164**, 251 (1969).
19. J. K. Harting, K. K. Glendenning, I. T. Diamond, W. C. Hall, *Am. J. Phys. Anthropol.* **38**, 383 (1973).
20. S. Polyak, *The Vertebrate Visual System* (Univ. of Chicago Press, Chicago, 1957), pp. 308–322.
21. G. L. Johnson, *Phil. Trans. R. Soc. Lond.* **194**, 1 (1901); D. H. Hubel and T. N. Wiesel, *Nature (Lond.)* **225**, 41 (1970).
22. M. Glickstein, *Science* **164**, 917 (1969).
23. M. Cartmill, in *Primate Locomotion*, F. A. Jenkins, Jr., Ed. (Academic Press, New York, 1974), pp. 45–83.
24. H. Rothe, *Z. Morphol. Anthropol.* **64**, 90 (1972).
25. This is true for the three Asian lorisine species; but *Perodicticus potto* and (judging from one specimen) *Arctocebus calabarensis* have galago-like interorbital breadths. Character divergence from the sympatric galagines has resulted in a specialized dependence on olfaction in *Perodicticus* and *Arctocebus*; their retention of a broad interorbital space probably reflects this, rather than any need to maximize parallax. See P. Charles-Dominique, *Biol. Gabonica* **7**, 121 (1971); A. Bishop, in *Evolutionary and Genetic Biology of Primates*, J. Buettner-Janusch, Ed. (Academic Press, New York, 1964), vol. 2, p. 181.
26. T. H. Huxley, *Proc. Zool. Soc. Lond.* (1880), p. 649.
27. L. Dollo, *Miscellanés Biologiques* (Station Zoologique de Wimereux, Paris, 1899), pp. 188–203; *Bull. Sci. Fr. Belg.* (1900), p. 275.
28. E. D. Cope, *Am. Nat.* **19**, 457 (1885).
29. H. Klaatsch, *The Evolution and Progress of Mankind* (Unwin, London, 1923), p. 68; D. J. Morton, *The Human Foot* (Columbia Univ. Press, New York, 1935), p. 23.
30. R. D. Martin, *Man J. R. Anthropol. Inst.* **3**, 377 (1968).
31. J. W. Gidley, *J. Wash. Acad. Sci.* **9**, 273 (1919); R. W. Haines, *Q. Rev. Biol.* **33**, 1 (1958); A. S. Romer, *Osteology of the Reptiles* (Univ. of Chicago Press, Chicago, 1955).
32. C. H. Barnett and J. R. Napier, *J. Anat.* **87**, 207 (1953).
33. O. J. Lewis, *Int. Rev. Gen. Exp. Zool.* **1**, 165 (1964).
34. F. A. Jenkins, Jr., *Science* **168**, 1473 (1970).
35. A. W. Crompton and F. A. Jenkins, Jr., *Biol. Rev. (Camb.)* **43**, 427 (1968); P. Wood, L. Vaczek, D. J. Hamblin, J. N. Leonard, *Life Before Man* (Time-Life Books, New York, 1972), p. 58.
36. G. G. Simpson, *A Catalogue of the Mesozoic Mammalia* [British Museum (Natural History), London, 1928], p. 87; J. A. Hopson, *Ann. N.Y. Acad. Sci.* **167**, 199 (1969).
37. E. P. Stibbe, *J. Anat.* **62**, 159 (1928); G. L. Walls, *The Vertebrate Eye and Its Adaptive Radiation* (Hafner, New York, reprint, 1965).
38. F. A. Jenkins, Jr., in *Primate Locomotion*, F. A. Jenkins, Jr., Ed. (Academic Press, New York, 1974), pp. 85–115.
39. L. Medway, *Malay. Nat. J.* **18**, 104 (1964); G. G. Musser, *Am. Mus. Nov.* No. 2503 (1972).
40. K. P. Schmidt, *Bull. Am. Mus. Nat. Hist.* **39**, 385 (1919).
41. R. K. Enders, *Bull. Mus. Comp. Zool.* **78**, 383 (1935).
42. G. E. Hudson, *J. Mammal.* **13**, 159 (1932).
43. J. F. Eisenberg and P. Leyhausen, *Z. Tierpsychol.* **30**, 59 (1972).
44. P. Murray, personal communication. Eisenberg and Leyhausen (*43*) report that the hands are never used to seize prey; but the observations of Enders and Murray contradict this.
45. V. V. Hickman and J. L. Hickman, *Proc. Zool. Soc. Lond.* **135**, 365 (1960).
46. F. W. Jones, *The Mammals of South Australia* (British Science Guild, Adelaide, 1924), part 2; R. M. Warneke, *Aust. Mammal Soc. Bull.* **2**, 94 (1967).
47. L. B. Radinsky, *Ann. N.Y. Acad. Sci.* **167**, 277 (1969).
48. A. J. E. Cave, *Am. J. Phys. Anthropol.* **26**, 277 (1967).
49. W. B. Spatz, *Folia Primatol.* **9**, 22 (1968); *Acta Anat.* **75**, 489 (1970). Chameleons have a tarsier-like rostral configuration.
50. F. S. Szalay, *Bull. Am. Mus. Nat. Hist.* **140**, 193 (1969).
51. ———, in *The Functional and Evolutionary Biology of Primates*, R. Tuttle, Ed. (Aldine-Atherton, Chicago, 1972), pp. 3–35.
52. E. L. Simons, in *Prosimian Biology*, G. A. Doyle, R. D. Martin, A. C. Walker, Eds. (Duckworth, London, in press).
53. R. F. Kay, thesis, Yale University (1973).
54. D. Russell, *Mém. Mus. Natl. Hist. Nat. Ser. C. Sci. Terre* **13**, 1 (1964); R. W. Wilson and F. S. Szalay, *Am. Mus. Nov.* No. 2499 (1972).
55. F. S. Szalay, *Am. J. Phys. Anthropol.* **36**, 59 (1972).
56. Four upper and four lower premolars on each side are still present in the adapid dentition, and (in Simons' interpretation) in the dentition of the probable anaptomorphid *Teilhardina*. The lower dental formula of Eocene tarsiids may be 0.1.4.3, but this is debated (*57*).
57. E. L. Simons, *Primate Evolution* (Macmillan, New York, 1972).
58. J. A. W. Kirsch, *Nature (Lond.)* **217**, 418 (1968).
59. P. D. Gingerich, *J. Dent. Res.*, in press.
60. H. Dimpel and J. H. Calaby, *Victorian Nat.* **89**, 101 (1972).
61. P. D. Gingerich, *Nature (Lond.)* **244**, 517 (1973).
62. I thank K. Brown, P. D. Gingerich, W. C. Hall, W. L. Hylander, F. A. Jenkins, Jr., R. F. Kay, and V. T. Lukas for their help. Several of the drawings of early Tertiary mammals are redrawn after materials furnished by Dr. Kay. Portions of the research underlying this paper were supported by grants-in-aid from the Society of the Sigma Xi and the Wenner-Gren Foundation for Anthropological Research, Inc.

NEWS AND COMMENT

Energy Reorganization: Progress in the Offing

In his periodic energy messages, President Nixon has drummed a persistent theme during the past 2 years that a dilatory Congress was holding up some of the Administration's major legislative initiatives, chief among them proposals to reorganize the government's tangled energy bureaucracy. The President's complaints were not without justification, although there are indications that the White House neglected to push its own proposals very hard before last summer.

There was, in any case, movement on two fronts last week that promises by early this summer to lob the reorganization initiative back into the White House court.

On 10 April the Senate reorganization subcommittee managed to resolve a months-long impasse and report out to the full committee a key Administration bill that would split the Atomic Energy Commission into two agencies—an Energy Research and Development Administration (ERDA) and a new regulatory body, the Nuclear Energy Commission (NEC). An AEC spokesman said that the bill seemed to contain no fundamental conflicts with a similar measure passed by the House in December. The spokesman predicted unofficially that the reorganization bill could be on the President's desk by early June. Allowing for built-in statutory delays, the AEC's metamorphosis could take place this fall.

Two days later, by coincidence, a study group commissioned by the White House last June released its analysis of organizational problems afflicting the federal regulation of energy resources, prices, and technology. William O. Doub, the AEC commissioner who headed the study, told a news conference that a major streamlining of the regulatory machinery could be undertaken by the White House within the next 12 to 18 months, largely without asking Congress for special legislation.

No major reorganizations are proposed, beyond those already before Congress, and no new regulatory powers are requested. Instead, Doub and his group offer up four ideas for coordinating and refereeing the activities of some 40 federal entities with a hand in energy regulation. They recommend:

- A National Energy Council, "to provide general policy guidance" where none now exists.
- A licensing coordination office to shepherd applications for energy projects through the wilderness of agencies.
- A permanent Energy Data Office to serve as a central source of supply-and-demand information.
- "New structural mechanisms," only vaguely defined, to improve relations between federal, state, and local governments in planning energy projects.

Doub's study is not the first to explore this particular regulatory jungle

in recent years; the Ash Commission probed deeply enough in 1970 to conclude that energy and natural resource agencies ought to be consolidated. And a 62-page analysis of energy organization prepared last year by Daniel Dreyfus,* one of Senator Henry Jackson's staff experts on the Senate Interior Committee, found some of the same deficiencies and offered some of the same solutions as appear in Doub's report.

What sets this most recent examination apart from its predecessors is the depth of its inquiry. Doub's staff took statements from, or met with, representatives of 48 special-interest organizations and surveyed the activities of some 40 federal agencies deemed to have a major or minor role in energy regulation. One important accomplishment, says Doub, a former chairman of the Maryland Public Service Commission, was to plot out "flow charts" of all the hundreds of individual steps that a utility or other private applicant must go through to gain federal approval of an energy project, whether based on coal, gas, oil, or nuclear fuel. This "gymnastic course" an applicant must traverse, Doub told a news conference, "had never really been explored before."

Plotted out in fine print, the flow charts cover several yards of paper. Months of inquiry, according to the study's report, reveals:

> [P]ersuasive evidence that the energy regulatory system is so disjointed and complex that any organization or group seeking to deal with it must be prepared to encounter more financial expense, confusion, and frustration than appears reasonable or warranted. If this is true for well-financed groups, sophisticated in the ways of federal energy regulation, it is infinitely more so for individual citizens and ad hoc citizen groups . . . without substantial resources or familiarity with the system.

The leading deficiencies and recommended remedies fall into the following four groups:

Overall policy. Complaints about the inconsistency, indecisiveness, and uncertainty endemic in the energy regulatory system were found to be "even more intense and prevalent" than complaints about delays. Probably the single greatest contributor to these and other deficiencies, the report says, is the lack of a national energy policy that would provide the regulators with a common set of goals and planning assumptions to guide and harmonize their decisions.

Critical areas in which guidance from higher authority has been lacking are "the timetable for national self-sufficiency"; energy conservation goals; the extent of reliance on foreign energy sources; and the amount of federal land that should be opened to exploitation.

The remedy proposed is a National Energy Council, modeled on the existing Council of Economic Advisers and the Council on Environmental Quality. Each of these councils consists of three members, appointed by the President, and a permanent staff. Doub's report stresses that such a council for energy would be both formulator and arbiter of policy, and should be independent enough to file position papers with regulatory agencies, make representations at public hearings, and be accessible to Congress and the public.

The idea of an energy council is very close to one proposed last year by Senator Ernest F. Hollings (D–S.C.) and greeted by the White House with no evident enthusiasm. Doub's study recognizes that such a council risks becoming a "mere ornament" unless it receives strong presidential or congressional support.

Inflexibility and a lack of coordination among federal regulators. Fifty years of building a piecemeal regulatory structure have left an uncoordinated collection of agencies with "narrow mandates and compartmentalized responsibilities." All things considered, the study found what it called "surprisingly little duplication" of authority. But it did discover numerous instances of tunnel vision and a tendency of agencies to adhere to existing technologies rather than encourage the testing of unproven innovations.

Each agency considers an energy project—an oil refinery, for example—from its own narrow point of view. And in most cases, the report says, no single agency feels the full weight of responsibility for a final decision on the project. "The result can be confusion and delay."

The answer proposed is a special "coordinating office," location unspecified, to push project applications through regulatory bottlenecks. The proposed office would set a timetable for each application received by the government, assign a "lead agency" to see it through to a conclusion, and arbitrate differences between agencies.

Incomplete, unreliable, and inaccurate energy data. The study reconfirms a central lesson of last winter's oil shortage: that information about privately held energy reserves, supplies, and profits is incomplete and inconsistent. "Even more surprising," the report says, is the fact that the federal government "lacks important information on energy reserves and activities on its own lands."

The study group recommends creating an Office of Energy Data in an existing agency or department. This would fill some of the existing data gaps, standardize information and record keeping, and provide reports to the public on supply and consumption trends.

A similar entity was proposed by Dreyfus a year ago. The idea seemed to acquire presidential sanction in January when Nixon proposed that a special Energy Information Center be set up in the Federal Energy Office, as an alternative to legislation then circulating in Congress to pry more information on fuel supplies from the oil companies. Doub's report suggests that such a center, besides gathering its own information and putting out reports, coordinate existing energy data systems in other federal agencies.

Lack of a permanent means for settling federal-state-local energy conflicts. Intergovernmental conflict over the siting and licensing of energy projects is seen as one of the most serious regulatory issues now, and one that is bound to intensify as the federal government accelerates its efforts to increase domestic supplies of energy.

As things now stand, the report says, state and local governments exercise effective veto power over energy projects in protecting their interests; in fact, "virtually all energy projects require more state and local authorizations than federal permits."

Regulation of land use is a power traditionally left to the states, but demands for energy may eventually require the Congress to preempt some of that power, the Doub study warns.

A happier three-part alternative is proposed: A new federal office devoted exclusively to improving relations with state and local governments and federal energy agencies; a permanent organization of state representatives, possibly chosen on a regional basis, to work with this federal office; and development of an "energy-related information exchange system" between federal and state levels, to help the latter understand how individual

* "Federal Energy Organization," prepared by Daniel A. Dreyfus, Senate Committee on Interior and Insular Affairs, 5 March 1973; serial No. 93-6 (92-41), 62 pp.

energy projects relate to larger national needs.

None of this, according to a disclaimer in the front of the report, represents the Administration's official position; that will await comments on the present report.

Unofficial or not, the Doub analysis is already the object of dark suspicions in Congress and the agencies that the White House is making a new grab for power over the independent regulatory agencies. No doubt some of the proposals would lend themselves to such a purpose, but there is no reason to believe that was what Doub and his staff intended. Nevertheless, in the prevailing atmosphere of intrigue and mistrust in Washington, and with the Federal Energy Office struggling to consolidate its power, even the most innocuous adjustments in the regulation of energy are bound to encounter stiff resistance. —ROBERT GILLETTE

The Politics of Biology: Young Academicians Becoming Involved

"It is time we became politically aware and socially responsive," declares Kenneth L. Melmon, who is anxious to see young biomedical scientists learn to deal effectively with members of Congress and the Administration. He himself has been trying to learn for the last year, during which he has been president of the country's largest society of young biomedical researchers.

Melmon, chairman of clinical pharmacology at the University of California School of Medicine, San Francisco, is the first to admit that, until recently, he was a good example of the politically naive scientist who had been brought up thinking that his place was in his laboratory. But he was also frustrated by his naiveté as he witnessed the government take actions he finds threatening to the future of biomedical research. So, when he had a chance to become president of the American Federation of Clinical Research (AFCR), whose 7000-plus members are all under the age of 41, he decided to accept it with the intention of helping make the AFCR a politically effective body.

"The AFCR had generally stayed away from politically sensitive issues," he noted in a conversation with *Science*. "In a sense, it had a clean slate on that score and I found the challenge appealing—a chance to begin something fresh."

At the same time, Melmon realized he was embarking on a perilous mission because the biomedical community is far from being of one mind on the subject of scientific organizations involving themselves in politics. "In 'going political,'" Melmon says, "you have to be careful not to compromise your primary objectives, which are scientific, or jeopardize its tax status —you have to keep your priorities straight. Basically, we're an organization of young scientists who get together to exchange scientific information. We can't let an interest in politics subvert our scientific purpose. And we have to be careful not to become politically involved in issues we know nothing about. We do not want to turn into lobbyists. Just the same, we have to learn how to speak up for ourselves."

(The AFCR is particularly serious about its determination to speak only on those issues about which it has an informed opinion. During the past year, for example, it accepted invitations to testify before Congress on training programs, research appropriations, and prescription drugs. It turned down a request that it testify on Indian health on the ground that, as a society of academic scientists, it really had no special expertise on the subject.)

The AFCR's aggressiveness has made some members of the academic biomedical community nervous, particularly those in the higher ranks. Position and age seem to be the key factors here. Those who have urged the AFCR to go slow or drop its political activity altogether are often former AFCR members, now 10 years older and a couple of rungs higher on the academic ladder. They do not want trouble and refer to the Association of American Medical Colleges (AAMC) as their political voice. Let the AAMC handle Washington and leave the scientific societies alone to devote their efforts to holding scientific meetings, they say. Melmon does not agree. "We [the AFCR] are not a social club but an organization of individuals trying to begin their professional lives. The problems of the young investigator are different from those who are already secure. If we can express ourselves well on our own behalf, there is no reason we should not. If we can't, no one will listen anyway."

The AFCR decision to enter the political arena did not come out of the blue 12 months ago, but is the result of feelings that have been building since the late 1960's. In 1969, for example, the AFCR decided to include a symposium on some social issue in its annual spring meeting in Atlantic City (*Science*, 19 May 1972). So, one year, a session on drugs was added to the usual sessions on such topics as cardiology, endocrinology, metabolism, and neoplasia. Another year, the subject was the impact of national health insurance on academic medicine.

This kind of effort, while useful, is limited by the fact that it involves only scientists talking to other scientists. During the last few months, the AFCR has put in place mechanisms giving scientists channels to the outside world.

The first thing Melmon and the AFCR council did was to establish a network of members who agreed to serve as representatives of the national organization in their local scientific communities. Someone has been enlisted at every academic medical center in the country. Now, these people are being asked to get to know their congressmen on AFCR's behalf. The idea is to establish a relationship with legislators in advance of crises, if possible, and to make the concerns of the young investigator known. Melmon summarized them in a letter to the newly delegated AFCR representatives: "As you know, our prime concerns are to main-