the drugs are taken. A spokesman for Ciba, makers of Dianabol, said the company has never conducted any studies into the effect of the drug on athletes. The package insert for Dianabol warns specifically, "Anabolic steroids do not enhance athletic ability." An FDA official told *Science* that the warning was required because the manufacturers had failed to provide evidence that anabolic steroids are effective for athletes. Thus the "do not enhance" in the package warning means only "have not been proved to enhance."

Medical researchers have shown little interest in the messy task of sorting out the psychological effects of anabolic steroids on athletes from the physiological effects. As for sports organizations such as the NCAA and the Amateur Athletic Union (AAU), the use of any drug is contrary to their ethos, and official attitudes range from reluctance to discuss the issue to an outright denial that the drugs are efficacious.

Such controlled studies as there are, most of them conducted by team physicians or physical educators, do little to resolve the salient issues of steroid efficacy. A recent double-blind study by S. W. Casner, former team physician at the University of Texas, indicated that an anabolic steroid caused subjects to put on weight but that the weight gain, Casner and his colleagues inferred, was in the form of retained water, not extra muscle* (the steroid used was stanozolol).

The most extensive series of experiments with anabolic steroids had been conducted by O'Shea and his colleagues at Oregon State University. In a 1969 study with Dianabol, O'Shea found that treated subjects gained significantly in weight and strength over matched controls.† (Crucial to O'Shea's treatment is that the athletes are fed a high protein diet and are made to train intensively during the anabolic treatment.) The design of this study has been criticized because athletes knew whether or not they were receiving steroids. O'Shea has now repeated the study according to a double-blind design with essentially the same results.‡ After a 4-week course of 10 mg of Dianabol per day, treated subjects increased their body weight by 5 percent (untreated controls gained less than 1 percent). The weight gain was presumably in the form of muscle, since the subjects, who were trained weight lifters, increased their weight-lifting ability by an average of 18 percent. It seems not unreasonable to infer, O'Shea concludes, "that a nutritional and physiological basis exists for the use of anabolic steroid agents for the purpose of improving physical performance."

With the moderate doses he used in these studies, O'Shea has observed no sexual effects, and the subjects reported no reduction in sexual appetite. (Paradoxically, administration of male sex hormone tends to reduce sexual drive by activating a hormonal counter-response.) The only side effect that turned up in O'Shea's studies is muscle cramps, which can be overcome by

* S. W. Casner, R. G. Early, B. R. Carlson, *J. Sports Med. Phys. Fitness* **11**, 98 (1971).
† L. C. Johnson and J. P. O'Shea, *Science* **164**, 957 (1969).
‡ J. P. O'Shea, *Nutr. Rep. Int.* **4**, 363 (1971).

Briefing

"High Hopes" for Chinese Exchanges

Chinese-American scientific exchanges were the subject of much of the talk last month between representatives of the Federation of American Scientists (FAS) and Chinese scientists and government officials. Just back from a month-long tour of China, FAS Executive Director Jeremy J. Stone will say only that he has "high hopes" of an exchange in the near future, but it appears nonetheless, that the date of a visit to America by Chinese scientists has been substantially advanced by the FAS trip.

A key concern the Chinese have, Stone reports, is for the security of anyone they might send. They have read about the assassination attempt on Wallace, of student demonstrations, and other forms of violence, and they wonder whether their nationals would be safe. Another question they ask themselves, Stone said, is whether an American university that had students with Chinese Nationalist backgrounds would be following a two-Chinas policy if it welcomed visiting mainland Chinese. One possible solution, even referred to by Premier Chou En-lai, Stone reports, would be traveling delegations or visitors to a series of institutions. The FAS is sending three prominent economists to China this fall.—D.S.

DBS Scientist to Head New Vaccine Bureau

A new director has been announced for the former Division of Biologics Standards (DBS), now the Bureau of Biologics in the Food and Drug Administration (FDA). He is Harry M. Meyer, chief of the DBS Laboratory of Viral Immunology and leader of the team that developed German measles vaccine.

The committee appointed by the National Institutes of Health in April to search for a successor to DBS Director Roderick Murray seemed to have been casting around for a big-name scientist from outside the DBS. With the transfer of the DBS to the FDA, appointment of the new director fell to FDA Commissioner Charles C. Edwards. His surprise choice of Meyer, whose name had not been widely mentioned as a possible candidate, together with the appointment of another DBS scientist, Ruth L. Kirschstein, as deputy director, is an expression of confidence in the DBS staff and will doubtless do much for the division's morale, which has taken some knocks in recent months.

In the controversy that has polarized the DBS for more than a year, Meyer has sought to retain a neutral position between the DBS establishment, as represented by former director Murray, and critics such as DBS staffer J. Anthony Morris and consumer advocate James S. Turner. Meyer thus has a good chance of being able to heal the division's internal wounds. As a working virologist, his appointment guarantees that science will play a dominant role in the operation of the future DBS, a condition for which its new environment did not otherwise augur well.—N.W.