number. Alternatively it is possible that although polyploid individuals may have arisen from time to time, they have not given rise to polyploid races or species owing to the rarity of self-fertilization in hermaphrodite animals. It is worth bearing in mind that in some groups of higher plants (for example, the Gymnosperms) polyploidy likewise seems almost entirely absent.

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June 6.

¹ Artom, *Biologica*, 1 (1908); Barigozzi, *Boll. Soc. Ital. Biol. Sperim.*, 9 (1934); Gross, *Naturwiss.*, 20 (1932).

² Vandel, *Bull. Biol. Fr. Belg.*, 61 (1927).

³ Seiler, *Biol. Zbl.*, 47 (1927).

⁴ Suomalainen, *Hereditas*, 26 (1940).

⁵ Muller, *Amer. Nat.*, 59 (1925).

⁶ Perrot and Perrot, *Rev. Suisse Zool.*, 44 (1937).

Practical Science in Schools

I HAVE naturally read with interest the communications from Dr. V. J. Chapman and from the Editors of NATURE on this subject.

There is no attempt on my part to get practical work abolished in schools. It is essential for such examinations as the 1st M.B., Higher Certificate and university scholarships. The science specialist should devote, in my opinion, at least half his time to practical work. In so many of our public schools, however, it seems to be felt that if there are about five hundred boys altogether it is necessary to make provision for half of them to do practical work at once. As pointed out by the Editors of NATURE a large majority of the boys complete their 'formal' education at the School Certificate stage and for this 'formal' education practical work is unnecessary. Had I my own way, and I am scarcely an anti-science teacher, I would make every boy in a public school learn Latin until he were either fifteen or had passed the School Certificate. Two good science lectures weekly with demonstrations are all that are required. The Latin learnt, however, would be the real thing and not Latin made easy. However, I will not try to dilate on this point.

Dr. Chapman's point about scholarship candidates knowing a good deal of advanced genetics but yet being unable to recognize a twig of larch leaves me almost unmoved. Experienced teachers and examiners will know of hundreds of parallel cases and they really signify nothing. No teacher, let alone the students, will tackle all parts of a vast subject with equal zest. I know of one scholarship candidate who tried to boil shrimps in a thick glass jam-jar, and another who was quite incapable of removing the gelatin from an old photographic negative. The former is a professor and the latter a fellow of his College. Both examiners and teachers might do well to remember such stories, even if they are not true, as that of Sir Isaac Newton who cut two holes in a door, a large one for the cat and a small one for the kitten. Even the greatest sometimes err and are human.

Dr. Chapman's contention that a plant or animal which has been cut up and handled can be more easily remembered, etc., though true, is open to criticism. Direct handling may be essential for the expert, but in general education it is by no means essential nor is it even always desirable. Is it even essential for a gynaecologist to have been a mother?

I certainly find myself at issue with the Editors of NATURE when they say it is not the business of schools to train academic, professional and industrial experts but rather to produce intelligent and knowledgeable citizens. The public schools make a great effort to select the very best boys and surely these particular boys should be urged to aim at the very highest standard of attainment and be supplied with the best teaching possible. Really clever boys under the expert teacher should produce a standard of work which will have a tremendous influence on the school as a whole, though obviously no school could cater exclusively for the expert. I think, however, that many public schools, not to mention a few of the universities, might do well to remember sometimes that there is such a thing as a real teaching profession. The primary duty of any teacher is surely to make his students *learn*, and when a student has learnt to teach himself thoroughly he has gone pretty far in the right direction.

The really able boys in a public school are frequently well occupied with classics or mathematics, and even those who wish to specialize in science can often postpone much of their practical work. It is for the second- and third-rate boys who are never likely to get beyond the School Certificate that one apparently requires these palatial laboratories and costly apparatus.

Surely the War should make us reconsider the matter.

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Common Salt as a Preservative

WITH reference to Mr. J. R. Norman's communication from Dr. Paul Chabanaud¹, I should like to support the opinion therein stated as to the value of common salt as a preservative for large specimens or when no other is available.

In the 'twenties I sent to the British Museum (Natural History) from this place, a distance of about 7,000 miles, two or three specimens of *Cephalorhynchus commersonii*, a dolphin 3-4 ft. in length, preserved with this reagent. The abdominal cavity was opened and salt stuffed in to capacity and the whole animal was covered with a heap of salt. Much of the fluid resulting ran away and as much as possible was drained off before packing in still more salt for dispatch. The method proved entirely satisfactory, the first specimen being, I believe, the original of the cast (♂) in the Whale Gallery of the Museum.

Salt was used for the preservation of the female genitalia of *Otaria byronia* illustrated in my recent paper on that species². This specimen was about 14 cm. long and 11 cm. across the cornua and naturally very muscular. It was placed in a glass jar and covered with salt, fresh salt being added to keep the specimen covered as a saturated brine was formed which was poured off. More than a year later the specimen was taken from the salt, soaked in changes of fresh water until quite soft, and then very gradually brought up to alcohol of about 70 per cent. It remained perfectly flexible and was an admirable subject for dissection.

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¹ NATURE, 145, 397 (1940).

² Hamilton, J. E., "A Second Report on the Southern Sea Lion, *Otaria byronia* (de Blainville)". *Discovery Reports*, 19, 121 (1939).