A section is devoted to the insects which prey upon plants, and to the measures to be taken for the destruction of these pests, as well as of fungi. That the book is up to date may be gathered by the references to Mendelism and De Vries.

A copious index is given, as well as hints as to the way in which examination questions should be answered.

A little more information as to the "reason why" of digging, watering, striking cuttings, and other garden operations would have increased the value of the book, which nevertheless is one which can confidently be recommended to the attention of all those interested in gardening.

Dr. Schlich's Manual of Forestry. Vol. iv. Forest Production. By W. R. Fisher. Being an English adaptation of "Der Forstschutz," by Dr. Richard Hess. Second edition. Pp. xxiii+712. (London: Bradbury, Agnew and Co., Ltd.)

THIS volume is the second edition of Prof. Fisher's "Forest Protection," and is uniform with the third edition of vols. i., ii., and iii. of Dr. Schlich's "Manual of Forestry." The book is an English adaptation of Dr. Hess's "Forstschutz," that is, it is not a mere translation, as the author has exercised discretion in his selection of material in order to make the book more adapted to the use of British and Indian foresters. New illustrations have also been added which are not in the German edition. The subject of forest protection is of immense importance, and covers a wide field of knowledge, practically including every branch of scientific sylviculture. The author has arranged and presented the various protective measures to be adopted against inimical agencies, both in the organic and inorganic worlds, in a very clear and interesting manner. The volume also contains a useful index at the end. Prof. Fisher has done valuable work by rendering available to student and forester a vast store of information which has hitherto been accessible only to a few. The book is one which we can warmly recommend to all those who have forests or trees under their charge.

The Essentials of Histology, Descriptive and Practical. By Prof. E. A. Schäfer, F.R.S. Seventh edition. Pp. xi+507. (London: Longmans, Green and Co., 1907.) Price 10*s.* 6*d.* net.

THE fact that this volume has reached its seventh edition shows conclusively that it supplies a want. The features of the present edition are the introduction of colouring in the illustrations and a considerable increase in the part devoted to the nervous system. In this portion practically a new set of illustrations appears, which can only be described as admirably calculated to indicate the salient points which the elementary student must be familiar with. Either for the purely scientific or for the medical student this book will continue to be of the highest value.

Actualités scientifiques. By Max de Nansouty. Pp. 361. (Paris: Schleicher Frères, 1906.) Price 3.50 francs.

THE general character of this annual publication was described in noticing the issue for 1905 in NATURE of November 23, 1905 (vol. lxxiii., p. 76). The short essays on scientific subjects of current interest range over most branches of science, and should be useful as reading exercises in French classes in schools where the pupils also learn something of science.

LETTERS TO THE EDITOR.

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

A Hydraulic Analogy of Radiating Bodies for Illustrating the Luminosity of the Welsbach Mantle.

THE device about to be described enables us to illustrate to a class the behaviour of different types of radiating bodies when introduced into a flame, and will be found especially useful in explaining the remarkable luminosity of the incandescent mantles used in modern gas-lighting. It is, of course, not intended to explain the mechanics of radiation, but merely to enable us to describe certain phenomena in terms of easily grasped notions.

Students are told that the more powerfully a body absorbs the more powerfully will it emit when heated, this relation holding for every individual wave-length. Black bodies, then, give out the most light when heated. The fact that a white block of lime is far more luminous than a carbon rod when heated in the oxyhydrogen flame is not usually cited in support of this law, while the fact that the most luminous body of all, the Welsbach mantle, is also quite white, is equally unsatisfactory as an illustration, for white bodies are in reality transparent, that is, they are made up of masses of small transparent particles, and transparent bodies ought not to emit at all. It is, of course, necessary to define just what we mean by transparency in this case, and it may be well to consider first a somewhat analogous case. The absorption which is accompanied by high emissivity is true absorption, and not selective reflection, which is sometimes confused with absorption. A highly reflecting polished metal surface is a poor radiator, but by properly constructing its surface we may give it the power to absorb and emit. A bundle of polished steel needles with their points all turned towards the source of light reflects scarcely any light at all, the rays undergoing multiple reflections between the conical ends of the needles. Such a bundle of needles should emit much more powerfully than a polished steel surface, and it is easy to see just why it should do so. Each needle, seen end on, sends not only emitted light to the eye, but reflects rays coming from its neighbours. The surface formed by the points of the needles can be regarded as an absorbing surface, which absorbs in virtue of its structure; it is analogous to the hollow "black bodies" with which we are now familiar. The point which I wish to emphasise is that such a surface, which absorbs not at all in virtue of its molecular nature, is also a powerful radiator, the mechanism by which its radiating power has been increased being as indicated above.

Suppose, now, we take a perfectly transparent body, which, like a perfect reflector, has no emitting power. A bead of microcosmic salt (sodium pyro-phosphate) heated in a blast lamp is a good example. Though the platinum wire which supports it glows with vivid incandescence, the bead remains perfectly dark. A glass bead, however, emits a good deal of light, doubtless from the fact that its transparency is much less at high temperatures, a very common behaviour of transparent substances. The microcosmic salt on cooling becomes traversed by hundreds of cleavage planes, which give it a milky appearance. On re-heating it it emits light strongly, until it finally fuses into a transparent drop, when it instantly becomes dark again. The reason for this behaviour is not quite so apparent as in the case of the needles. In fact, I am not quite sure that I understand it at all. Quartz behaves in the same way. A drop of clear fused quartz, heated in the blast, emits little or no light, but if it contains spots made up of an emulsion of quartz and air, these spots emit strongly. In other words, an opacity resulting from a pulverisation of the transparent medium seems to be accompanied with a strong emitting power. Apparently we cannot apply the same reasoning as in the case of the needles, and it looks rather as if the radiation was largely a surface effect. If this is so, it is obvious that an