vidual. Theory has here been closely followed by its practical application in prevention and treatment of disease, whilst the study of bacteriology, which is of such remarkable pre-eminence at the present time, is opening out sources from which may flow results of incalculable importance in their bearing on life and health. That the conclusions arrived at are always to be depended on I doubt, and it seems that scientific zeal may perhaps sometimes outrun discretion. That it might be wiser to postpone generalization has, I think, been more than once apparent, whilst the expediency of further investigation before arriving at conclusions which may subsequently prove to be erroneous should not be lost sight of; but it has probably ever been so in the course of scientific progress, that in the enthusiasm of research, which is rewarded by such brilliant results, early generalization has too often been followed by disappointment, and it may be by temporary discouragement of hopes which seemed so promising.

It would be well to bear in mind a caution recently given by the Duke of Argyll, "that we should be awake to the retarding effect of a superstitious dependence on the authority of great men, and to the constant liability of even the greatest observers to found fallacious generalizations on a few selected facts" (*Nineteenth Century*, April, 1891). Still, it is in the region of scientific research by experiment that we look for real progress, and we can only deplore the mistaken sentiment, the false estimate, and the misconstruction of its aspirations and purposes, which have placed an embargo on experiment on living animals, rendering the pursuit of knowledge in this direction well-nigh impossible, if not criminal; whilst for any other purpose, whether of food, clothing, ornament, or sport, a thousandfold the pain may be inflicted without question. The inconsistency of the sentiment which finds unwarrantable suffering in an operation performed on a rabbit, when the object is to preserve human or animal life or prevent suffering, but which raises no objection to the same animal being slowly tortured to death in a trap, or hunted or worried by a dog, needs no comment; whilst the spirit which withholds from the man of science what it readily concedes to the hunter is, to say the least, as much to be regretted as it is to be deprecated.

It must be remembered that, important as are the researches into microbiology, there are other factors to reckon with before we can hope to gain a knowledge of the ultimate causation of disease. It is not by any one path, however closely or carefully it may be followed, that we shall arrive at a full comprehension of all that is concerned in its etiology and prevention, for there are many conditions, dynamical and material, around and within us which have to be considered in their mutual relations and bearings before we can hope to do so; still, I believe we may feel satisfied that the causes of disease are now being more thoroughly sought out than they ever have been,—all honor to those who are prosecuting the research so vigorously,—and that though individual predilection may seem sometimes to dwell too exclusively on specific objects, yet the tendency is to investigate everything that bears upon the subject, and to emphasize all that is implied in the aphorism, *Salus populi, suprema lex.*

## NOTES AND NEWS.

AT the meeting of the committee on organization of the National Association of Government Geologists, Aug. 29, the secretary, Mr. Arthur Winslow, was instructed to draft a constitution and by-laws to be submitted to the committee at a meeting to be called in connection with the annual meeting of the Geological Society in December next. The secretary was further requested to notify all State geologists of this movement towards organization, and to invite them to be present at the next meeting.

— At the monthly meeting of the Field Naturalists' Club of Victoria, held on July 13 last, as we learn from *Nature*, Messrs. Luehman and French read a note and exhibited the skin of a tree-climbing kangaroo from northern Queensland, new to science, to which they gave the name of *Dendrolagus muelleri*. This remarkable marsupial has a body about two feet in length, with a tail somewhat exceeding two feet. The disproportion between the fore-legs and the hind-legs is not nearly so great as that of the ordinary kangaroo and wallaby; the toes are strong and curved, to enable it to climb tall and straight trees, on the leaves of which it exists. This tree-kangaroo is more nearly allied to the species which was discovered a few years ago in Queensland than to the two species from New Guinea. The specimen described was got from a straight tree, about ninety feet above the ground.

— M. Imfeld, the Swiss engineer, who has been engaged to examine the nature of the summit of Mont Blanc for the construction there of M. Janssen's proposed observatory, recounts in a Zürich journal the difficulties he is experiencing in his preliminary survey. *Nature* states that M. Imfeld is staying with eight workmen and two doctors at M. Vallot's observatory, which has an altitude of 4,400 metres, and thence they proceed daily to the summit, where they work for several hours a day in the endeavor to ascertain the depth of the snow for the purpose of getting the necessary foundation for the building. M. Eiffel has expressed the opinion that the construction of an observatory will only be possible if the snow does not exceed a depth of twelve metres. M. Imfeld states that they have encountered traces of a ridge of rock eighteen to twenty metres below the summit, and covered with about one metre of snow. They have therefore commenced to make a series of lateral tunnels on three sides, at a distance equal to twelve metres below the summit, to ascertain if the ridge extends to that height. Progress is necessarily slow. Most of the men are suffering from *mal de montagne*. Some, however, who are engaged at M. Valiot's cabin, are able to work almost as long as in the valley, and they also eat and sleep well. In spite of two coke stoves, the thermometer of the cabin never rises above zero; even ink freezes, and water boils at 83°, and they cannot properly cook meat. For a day or two they were disturbed by violent storms.

— In a bulletin recently published by the Pennsylvania Experiment Station (State College, Centre County), Professor William A. Buckhout gives some valuable information relative to the culture of the chestnut. The chestnut cannot be grown successfully on heavy clays, wet soils, or limestone land. It prefers loose, sandy soils, or such as has been derived from the decomposition of slates and shales. In Ohio it is found native on the sand ridges which border on the lake shore, and on the shaly hillsides of some of the hill counties in the southern portion of the State, but never on the limestones which cover the western and south-western portions of the State, nor can it be cultivated in this region with any prospect of success. The chestnut grows readily from the seed, but the greatest care must be exercised not to permit the nuts to become dry. To accomplish this they must be planted as soon as gathered, or else must be kept in moist sand until ready to plant. If possible the nuts should be planted where the tree is to stand, as the chestnut has a long tap-root which renders transplanting difficult. Our native chestnut is practically of but one variety; the European chestnut is not only much larger and finer than the American, but has produced, under cultivation, a number of varieties, some of which are highly esteemed for the superior quality of their fruit. The trees do not grow so large as the American, and come into bearing more quickly; the latter does not usually fruit until ten or twelve years old. Within the past few years species from Japan have been introduced into the United States. Unfortunately they do not appear to be entirely hardy, except in the South and some favored localities in the Middle States. They are quite dwarf in habit, produce nuts larger even than the European, and begin to fruit when they are but four or five years old. These two characters, small size and early fruitfulness, give them special value, and if they can be worked upon stocks of the American species we can secure trees which will bear earlier and produce larger nuts than our native species. The supply of chestnuts never equals the demand in this country, and many districts in which the trees are abundant derive a very respectable income from the sale of the nuts. It is therefore obvious that this is an industry which can be made far more productive and profitable than it now is, since very little effort has been made towards cultivation.