Veterinary Department.

Toronto Veterinary School.

EXAMINATION FOR DIPLOMAS.

THE annual examination of students for the Diploma of the Toronto Veterinary College, took place in the Agricultural Hall, Toronto, on Thursday, March 19th The examination was conducted very carefully and faithfully by the various gentlemen appointed to this important duty, and the manner in which the successful candidates passed through the trying ordeal, reflected great credit on their diligence and acquirements, besides furnishing good evidence of the thorough and practical character of the instruction given in this useful institution. Each student was examined singly, before first one and then another of the examiners, and the acquisition of the Diploma is evidence that in each and all the departments of veterinary science, the candidate had acquitted himself satisfactorily, and proved himself qualified to undertake the serious responsibilities of his profession.

The examination was conducted in Anatomy, Physiology and Diseases, by — Varley, Esq., of the 13th Hussars; Lang, Esq., of the Royal Artillery; and — Hagyard, Esq., V.S., of Brampton; in Anatomy by Drs. Bovell and Rowell; and in Materia Medica by Dr. Nicholl, of Toronto.

Out of nine candidates for the Diploma, eight succeeded in attaining this distinction, namely:—Robert P. Gemmel, of Islington, H. O. F. Coleman, Toronto; Jas. H. Wilson, London; J. H. Sanderson, Richmond Hill; S. M. Wells, King; William Cowan Cloghmoor, Galt; John Upsall, Clinton; and G. W. Thomas, Arran.

We are glad to learn that this very important institution is steadily progressing. The number of students who have attended the classes during the past session exceeds that of any previous year since the establishment of the school. They come from all parts of the Province, and their future spheres of practice will doubtless be equally wide. The following are the names of the students, in addition to those already mentioned, as having completed their course and obtained their license to practice: - William Stubbs, Charleston; John McDonald Zorra; John Everley, St. Thomas; John Richardson, Ailsa Craig; Thomas Baker, Galt; Robert Hales, Markham; D. G. Sutherland, Staines; Thomas Hope, Ayr; C. H. Sweetapple and Adam Hunter, Toronto; John Fishburn, Stouffville; Donald Mackintosh, Elora; S. Hawkins Oxford; and John Douglas, Durham.

The school affords ample opportunities for the acquisition of a thorough knowledge of the Veterinary profession, the students having access to the agricultural and other classes at the University, besides attending the instructions of the regular teachers; Mr. A. Smith conducting the principal studies of Anatomy, and Veterinary Surgery and Medicine, while the department of the Rearing and breeding of animals is taught by Professor Buckland; Physiology by Dr. Bovell, and Materia Medica by Dr. Thorburn.

In the evening the annual dinner of the College was held at Mr. Thomas's English Chop House, King street. Mr. R. D. Denison, Treasurer of the Agricultural Association, occupied the chair. The Vice-chairs were ably occupied by Professor Smith, of the College, Professor Buckland and Dr. Thorburn, while among those present besides the graduates and undergraduates of the College, were Drs. Lizars, Richardson, Hampton, Rowell, Pollock, Captain Joice, 13th Hussars, Messrs. Kingsmill, Scott, Morris, and a number of others, the entire company numbering about fifty persons. After full justice had been done to a substantial and well prepared repast, the usual loyal toasts were proposed and received in the most enthusiastic manner.

The CHAIRMAN, in giving as a toast "The Veterinary School," adverted to the circumstances that led to the formation of the College. This was owing to the energy of the Hon. Adam Ferguson, a gentleman who thoroughly believed that young men could be as successfully educated here as in the Edinburgh school. This led to Mr. Smith being appointed to the school, and since that time its results have been in the highest degree beneficial. There is more valuable stock in a range of three miles now than in the whole of Canada five-and twenty years ago, and thus the necessity for the Ontario Veterinary School is apparent.

Mr. SMITH responded, returning his sincere thanks for the honor done him and the institution. He then traced the formation of the College, the results of which had proved eminently successful. Some of those who had passed are now successful practitioners; but there was still a wide range. As agriculture extended so would the demand for the services of a Veterinary Surgeon. Some of the herds of Canada would now compare favorably with those of the old country; our farm horses are in demand, as is shown by the large numbers exported; and these facts proved the benefits of the school. He took the opportunity of thanking the medical men of the city for their assistance, and the various members of the Board of Agriculture who had given their encouragement and support to the institution. In concluding, he proposed "The Agricultural Association of Ontario."

Professor BUCKLAND thanked those present for the compliment they had paid the Board of which he had been a member since its organization. At the same time he referred to the progress of the school, and concluded by proposing the health of the gentlemen conducting the examination.

Dr. NICHOL responded, complimenting the pupils on the aptness displayed in their examination, followed by Mr. Lang in similar sentiments.

Entomology.

The General Structure of an Insect.

THERE is one peculiarity about insects, which they have in common with many other classes of the lower animals, and which we did not, therefore, refer to when describing what an insect is, and showing how it differs from those animals most like it. This peculiarity is, that they have no internal framework of bones, but carry their skeleton on the outside of them. We, and all the higher animals, such as horses and cows, birds and fish, frogs and snakes, have a jointed spine running through us, to which is appended the bony framework of the body, the whole being concealed from view by flesh, skin, hair, scales, etc., as the case may be. But insects are quite different. They have no bones at all,—no spinal column. How, then, are their bodies supported and kept in shape? What prevents their collapsing into a state of jelly? Take up any common insect, and you will see. Look at a beetle, for instance; feel how hard its body is; it requires some force to crush it. Now, this outside shelly covering is its skeleton, —at least it is the nearest approach to a skeleton that it has. To it are attached on the outside the legs and wings, and the other organs used in obtaining food, defence, etc.; and on the inside the muscles, while the whole forms a protection for all the delicate internal organs. The substance of which this external skeleton, as we may term it, is composed, is a horny material called *Chitine*, which is found only in animals of this kind; to this are added a few other substances, in particular a certain kind of oil of variable color, which being disposed near the surface, gives to these animals their wonderful variety of beautiful color.

The subdivision of this outer framework into a number of sections—its being notched or almost cut in two—is one of the chief characteristics of insects, as we have already stated. These different sections form a continuous series of rings or segments, as they are termed, each one being connected with the next by a sort of ball and socket joint; the motion of this joint, however, is more or less modified in different kinds of insects, and in the different parts of the same individual. Sometimes all these segments are very distinct, and can be readily distinguished from each other; this is especially the case in the caterpillar or grub state; but sometimes, as in the perfect state, they are not so apparent, the body then being generally divided into three very marked portions, which are called the head, the thorax, and the abdomen,—of these we shall presently speak more particularly. Thus, then, the number of segments seems at first sight to vary very much; but this variation is more apparent than real; some segments being so closely connected with others that the distinction between them can hardly be detected, while others acquire so great a development that they dwarf, or almost absorb those adjacent to them.

Until recently the typical number of segments has been considered to be *thirteen*, of which the head took up one, the thorax three, and the abdomen the remaining nine. But late observation, coupled with more elaborate dissection and study, have decided upon *twenty* as the number of segments,—seven in the head, three in the thorax, and ten in the abdomen. Of the seven head segments, four are grouped in front of the mouth opening in perfect insects, and three behind. The four in front bear the organs of sight and sensation, such as the different pairs of eyes, and the antennæ; while the three behind bear the palpi or feelers, and the two pairs of jaws. No single segment, however, is fully developed in the head, the foremost rings being especially reduced in size, and incomplete. Thus, in the words of Mr. Packard, "it is by the diminution in size, or the entire absence of useless parts, and the presence and increased size of the more important parts of the ring which are to support these organs during growth, that the head is shaped and acquires its finished form in the adult."

These, we fear, are but dry details, yet it is necessary to have some knowledge of them in order that we may properly understand the wonderful symmetry and adaptation of means to ends that exist in these minute creatures, and be able further to appreciate the outlines of their classification, without which our notions of them will be confused indeed.

Entomological Society of Canada; Annual Report of the London Branch for the year 1867.

THE Committee of the London Branch of the Entomological Society of Canada have much pleasure in presenting their third Annual Report.

The number of members is now sixty-one, though several losses will occur this year, owing to a change of residence, etc. There have been held during the year, one special, and ten monthly meetings; the average attendance being eight. The Committee deem it a matter of great congratulation to members that, owing to the liberality of the City Council, the Society has now permanent rooms of its own in the City Hall, with the privilege of using the Hall when required.

The oxyhydrogen apparatus, purchased during the past year, has been the means of inducing a good many members to join the Society. Four public entertainments were given by the Society during the year, and, although the result was not so satisfactory in a pecuniary point of view as had been anticipated, still your Committee feel that a great success was achieved in bringing the Society more prominently before the public, and in tending to promote some slight interest in Natural History, and our own particular portion thereof.

The Committee trust that before long they will be able to discharge the debt now due on the apparatus A most satisfactory arrangement has been made in the payment of subscriptions to the Parent Society, and the thanks of the Branch are due, and are hereby tendered to the Parent, for so kindly acceding to their wishes.

A great aid has been given to collectors in the publication of the "List of Coleoptera" by the Parent Society.

The Committee, in conclusion, would desire to impress on members the importance of making every effort to forward the Society's interest, more especially in inducing persons to join the Society, and take some interest in its objects and designs.

All which is respectfully submitted.

JOHN M. DENTON, President.
EDMUND BAYNES REED, Sec'y.