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FEW REMARKS

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ON

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OR THE

STUDY OF DOMESTIC ANIMALS.

DEDICATED (BY PERMISSION) TO

CHARLES DARWIN, ESQ., M.A., F.R.S., &C.,

BY

FRANCIS BURGES GOODACRE, M.D., F.Z.S. Rector of Hardham with Wilby, Norfolk.

ROBERT HARDWICKE, 192, PICCADILLY.

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Loogle



## ON THE STUDY OF DOMESTIC ANIMALS.

Some speak and write for the sake of saying something; others do so because they have something to say. The latter is my case in the present instance. Whether the remarks in the following pages be worthy of publication time will prove. The difficulty I feel in writing on the subject I have chosen arises not so much from want of matter, as from want of power to express clearly and pointedly my own thoughts, in such a way as to win the attention and favour of those who by their learning and position are most capable of working up into a regular and practical form the ideas and suggestions I am about to make. I endeavoured in 1873 to escape the task I have now undertaken, of going into print on my own responsibility, by sending two letters to The Country (see Nos. I. and XVII.), hoping that some more able person would take the matter up; but one reply was all that appeared (see No. III.). I still adhere to my opinions there expressed, and now venture to put them forth again rather more fully, leaving it to my readers to judge whether they be more than idle fancies. Most will allow it to be the duty of all who can to advance true science; and though laying claim to no important discovery, I am under the impression (rightly or wrongly remains to be proved) that certain thoughts I have long had may, if communicated, stir up similar ones in the minds of others, that in due time may bring forth useful results. And now, without further preface, I will briefly state the object I have in view in the following pages, it is simply this-to make such remarks as shall tend to shew that the study of domestic animals ought to take rank as a distinct branch of zoology, and to mention some of the ways and means of bringing about what appears to me so desirable an event.

As we all know, zoology consists of many departments, ornithology, entomology, &c., are terms generally received and constantly used; a name framed in accordance with these, for the study of domestic animals, has not yet been agreed on; doubtless when its need is felt one will be forthcoming; meanwhile I may mention the word "Hemerozoology" has been kindly suggested

الله: المستقدم to me by one of the best classical authorities in Cambridge as a proper term to describe the science of domestic animals.

It is no less strange than true, that though from the remotest antiquity certain animals have been domesticated and kept in attendance on man, their scientific consideration has not yet assumed that definite form which it surely deserves, when we remember the very close links which bind their history with that of mankind; nor has the same interest been shewn in them by naturalists generally, as in wild animals, often of far less importance to man. In every quarter of the globe are new species being continually discovered; names are found for them, and their descriptions and frequently plates of them are published in this and other countries; and well is it that such is the case, for by such praiseworthy labours of naturalists has zoology been enabled to make vast progress during the last half century. There is no good reason why, amidst all the zeal displayed by zoologists, the study of domestic animals should be overlooked; and, if I judge the signs of the times aright, we are gradually drawing near the day when it will be considered a distinct branch of zoology; but the progress we are making in that direction is fearfully slow; and if any remarks I may make shall hasten the general reception of this doctrine, I shall feel myself fully repaid for any trouble I may incur in thus bringing my thoughts before the public, and any risk I may run of being condemned as a mere enthusiast. Some thirty years or so ago, domestic animals and garden plants were not regarded as fit subjects for the consideration of the zoologist and botanist, and were left for the "fancier" and "florist" to deal with as they pleased; and hence, in what was written concerning them, many errors arose through want of zoological or botanical knowledge; but even so far back as the time I have mentioned, some of the leading zoologists of the day-such as Lieutenant-Colonel Hamilton Smith, Professor Bell, &c., took a wider view of matters, and ventured to write in their zoological works far more fully than was usual, concerning domestic animals. In 1868, Mr. Darwin's great work, The Variation of Animals and Plants under Domestication, was published, doubtless the most important one that has yet appeared on the subject of domestic animals zoologically considered; one special merit of this work arises from the fact that the author is not only a first-rate zoologist and botanist, of wonderful powers of observation and research, and of great experience, but also a "fancier" and "florist;" and in giving the history of a few domestic animals, he does it in a way that a zoologist and "fancier" combined alone could. The sad part of the story to me is (and there may be others who view matters in the same light), that six

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years have rolled by since the publication of this valuable work, and apparently next to no effect has been wrought by it towards establishing the study of domestic animals as a distinct branch of zoology. Still the facts Mr. Darwin record remain, and we may yet hope that some day they may be turned to account, in the promotion of the study I am advocating, by being brought into greater prominence, and put forth in some more popular work that will gain the sympathies of a large class of men, who though they be lovers of certain domestic animals, care but little to study the doctrine of evolution in any of the forms it has assumed. Had Mr. Darwin's work, above referred to, been nought else than a treatise on the subject mentioned in its title, I think it would have been read as eagerly, but by a rather different circle of readers; that it would have met with less opposition, and have produced some good and lasting results in a direction much needed : as it is, it revived the flames of controversy among naturalists that burst out so fiercely at the publication of The Origin of Species. And there seems small chance of the blaze dying out just yet for want of fuel; but should it ever do so, my hope is that something may be found among the ashes whereby the contending parties may be enabled to correct their zoological faith according to the standard of truth. In spite of my disappointment in the result of Mr. Darwin's work above alluded to, I still contend that any attentive and intelligent reader may learn from it how wide a field of investigation yet lies open to those who will take up the study of domestic animals as a branch of science; how many problems remain to be solved, how many assertions to be verified, how many experiments to be made, how much contradictory statement to be sifted, and, if possible, harmonised.

The study of domestic animals is fraught with peculiar difficulties; the subjects the student has to deal with appear in many cases to him in disguise; it needs a practical eye and a specially educated mind to distinguish which are the variations caused by domestication, and which by nature, unassisted (or rather not intermeddled with) by man. So curious in many cases are the changes domestication has wrought that of some of our most familiar friends it may be said we recognise them not; we of course know a cat or a dog as such; but after all that has been written about their wild originals, naturalists have as yet failed to identify any particular species of wild cats and dogs as the undoubted originals of our domestic friends. Many are such knotty points, and though it seems vain to hope to unravel all, yet some may yield to patient investigation and research, and clear the way for the disentanglement of others. The short method of dealin with such questions adopted by some (vide Journal of Transactions of the Victoria Institute, Vol. I., 410, and Vol. VI., 17) will be considered by most to be unsatisfactory, and not borne out by the knowledge we already possess. True it is that antiquity shrouds the history of many (yet not of all) in thick clouds; but equally true is it that mysteries in nature become revealed to diligent students often when least expected. I am convinced that many valuable discoveries in science await the systematic study of domestic animals, though it be quite impossible to say beforehand what those discoveries may be, and the order in which they shall A few years ago, who would ever have expected that be made. the men of our generation would be able to discover the metals in the moon and stars? Now it is an acknowledged fact that in far distant worlds there are the same metals as here on earth. beautiful illustration is this discovery of the harmony that exists between the various branches of natural sciences! They may be compared to a group of pieces of a child's picture puzzle, each having its own particular position, but touching others at various points all round, each several fact to a small piece composing this group helping to explain the whole when put into place, by completing in some degree, more or less, the whole design, by joining the lines, lights and shadows of the picture, so as to make more evident the intention of the artist who planned it. Pursuing this simile, the study of domestic animals is a many-sided mass, composed of a vast number of curiously shaped pieces, very full of detail, but so divided that their relation to the main design is often far from evident, and the placing them into position, a matter requiring much consideration and patience, and often next to impossible, owing to some intervening pieces between them, and those already arranged not having been as yet fitted in. There is another difficulty of quite another kind that confronts us at the very beginning, and must be met ere any progress can be made towards bringing the study of domestic animals into its true position as a branch of zoology. Happily, for practice, a very arbitrary mode of dealing with it will suffice, and such, for expediency's sake, I shall venture to adopt. The difficulty to which I allude is the determination of which animals shall be considered "domestic," and which not; for they shade into each other as light does through twilight into darkness, so that it is no easy matter to define the exact bounds where one begins and the other ends; for there is every degree of domesticity from the so-called wild cattle of Chillingham to the dog-the friend of man. There is a very interesting article about domestic birds in Recreative Science (Vol. II., 141), &o., and I quite agree with the writer of it

that tame animals may be divided into three groups. First, reclaimed or tamed individuals, many of which will not breed in their altered circumstances. Under this head would come elephants, falcons, parrots, &c. Secondly, naturalised animals, many of which are only partially tamed. Among these would be classed park deer, pheasants, and many of the geese and duck tribe, usually called ornamental waterfowl. And, thirdly, domestic animals properly so called, depending more or less on man for support, and bred from generation to generation while in his service, and in many cases so much under his control that he has been able, to a considerable extent, to modify them in temper, shape, size and color, to suit his uses or his fancies. I am aware that these three groups shade into one another, and that it is hard to make out a list of this third division that would be accepted by all as correct; but as it is of these alone I am endeavouring to shew the desirability of a more scientific study, I shall give a list which will answer my present purpose, and for the time being I must ask my readers to assume that it is correct.

Mammals.	Birds.	Other Classes.
Cat. Dog. Ferret (1). One-humped Camel. Two-humped Camel. Llamas (probably more than one species). Rein Deer. Oxen (several species). Yak. Buffalo. Sheep. Goat. Horse. Ass. Pig. Rabbit. Guinea Pig (1).	Canary. Pigeon. Dove (2). Common Fowl. Guinea Fowl. Peafowl (4). Turkey. Swan (3). Common Goose. China Goose. Common Duck. Musk Duck.	Golden Carp. Honey Bee. Silkworm Moth (5).

A LIST OF DOMESTIC ANIMALS.

(1.) Rats and mice have nearly equal claim to be included, for they vary as much or more in color, are equally tame when kept as pets, and breed readily in confinement.

(2.) Except that it has been bred in confinement for endless generations, the Barbary Dove barely deserves a place here.

It is far from my intention to take the animals mentioned in the above list separately and give a chapter on each, I have neither the ability for the task, nor do I see its necessity for my present purpose, which is merely to shew the importance of the study of domestic animals; still there are a few general observations I would make on the list here given; the first thought that naturally strikes one is, how very short it is to what it most probably might have been, and how few additions have been made to it in comparatively later ages. Another thing worth observing is, that all (or nearly all) the birds are known to exist in a wild state, and therefore their degrees of departure from their wild originals can be measured ; but the contrary to this is the case with about half of the beasts mentioned in the list, and concerning the old world camels, it is generally acknowledged on all hands that they exist now only in a state of domestication. Of those we do know the wild original, one a piece is found to be sufficient; why then should we suppose it to be different with the remainder? I am aware in saying this, I am setting up an opinion at variance with some of the greatest authorities, but it seems only fair to suppose what remains to be discovered, will be in harmony with what has already been determined. In the case of the llamas and oxen, the whole subject is greatly complicated by our present ignorance as to the exact number of true species both domesticated and wild; the former may be unduly multiplied (on paper) on account of the strangeness and permanency of some of the varieties; the latter may in like manner be unduly increased, by mistaking feral animals for real wild ones, for it is by no means proved that feral animals always revert to exactly the original type. Again, there are varieties among wild animals, and geographical races, which, to say the least, add not a little to the complexity of the subject. Again, there is another curious fact worth observing, and that is the capability of variation is distributed in various degrees to species of closely allied genera; this is harder to guess at beforehand than the probable degree of fertility under domestication, the latter, speaking broadly, runs according to family, not so the former; the pigeon and dove have long been kept under man's care, and have bred freely, yet one has varied about as much as

The Black Winged Peacock is purposely omitted, for reasons hereafter stated Many insects can be kept, but perhaps none other deserve a place here. (5.)

<sup>(3.)</sup> The Mute Swan is one of the doubtful members of this list, though long bred in this country, and often quite tame, it has to be secured by pinioning. The Black Swan, Egyptian Goose, and various other like birds, can be kept quite as easily. as easily. (4.)

any animal under domestication, the other about the least; and something similar may be said concerning the horse and ass, and the common fowl and guinea fowl. If on mentioning these thoughts which might naturally arise in one's mind when considering the list of domestic animals, I may appear to have rambled away from my subject, I will only say that they, taken with others that might occur on hybridity, intercrossing, &c., tend at any rate to prove that there is a vast deal more philosophy in the study of domestic animals than some, in their wisdom, have ever dreamt of; many are the difficulties to be overcome; wide is the field for observation and experiment to be explored, ere this department of science can be considered equally advanced as most other branches of zoology.

It is not so very long ago since geology was quite in its infancy, and now what a wonderful change it has wrought in the opinions of scientific, and other thinking men, and though many of its early doctrines are being given up, yet new ones arise which are ever producing a mighty influence on men's minds, and perhaps it is not too much to expect something of the same kind (though probably in a less degree) to follow the study of domestic animals, if pursued as a distinct branch of science; for their history is connected with that of man by the closest bonds, and though he has had no part in the implanting in each species its particular degree of capacity of variation, yet he has had a part knowingly or unknowingly in encouraging and developing variations, and fixing them when obtained.

There is a curious analogy between civilisation of men and domestication of animals, and also a near relation between the two, for it is among civilised nations that the domestication of animals is carried on in the highest degree, and this fact alone binds the study of domestic animals to the history of man in a different way to that by which other departments of zoology are connected, and it also gives bearings to various other branches of science, so that many besides zoologists ought to find a special interest in it. If properly put into form, the geologist, archæologist, biblical student, artist, sportsman, farmer, and "fancier" might derive from the study of domestic animals many useful, practical hints or knowledge that would guard them from error. We have only to read some of the many popular works on what are called fancy animals (i.e. fancy poultry, &c.), and we may be soon convinced how out of harmony they are with zoology; mere domestic varieties are treated as distinct species, wild originals of these are sometimes supposed to exist somewhere, regardless of all knowledge of the geographical distribution of genera, and the most confusing state-

ments are often made concerning the hybridisation and intercrossing of domestic animals. Our scientific knowledge of such animals may well be said to be scanty and scattered, and no great advance can be hoped for till what is known be gathered together and conflicting accounts compared and corrected in accordance with truth, as far as that can be ascertained from knowledge already obtained or obtainable by research and experiment. I have alluded to this before, and will now give two very marked cases, which, though taken from the writings of noted zoologists, may serve as examples of a vast number of differences of opinions, that doubtless might be greatly reduced if properly handled. In The Variation of Animals and Plants under Domestication, (Vol. I., page 237), Mr. Darwin writes, "There is, in fact, only one kind of domesticated "bird, namely, the Chinese Goose, or Anser Cygnoides, of which "the wild parent form is said to be still unknown or extinct." Mr. Swinhoe, P. Z. S., 1863, page 323, in a list of birds of China, mentions Anser Cygnoides as a wild goose visiting the shores of North China in winter, and frequently procurable in the markets; but adds, it has no distinct knob on the bill. Perhaps, if the matter were carefully examined, it would turn out that the existence of the wild Chinese Goose had even escaped Mr. Darwin's knowledge or memory at the time he wrote the passage quoted above, and the absence of a distinct knob on the bill, in Mr. Swinhoe's birds, would probably be explained by their age, for in the domestic bird the space for the knob is evident long before the knob is developed. The other case I will cite is the difference of opinion between Mr. Darwin and Dr. Sclater concerning the common and black winged peacock, with respect to their identity Mr. Darwin Animals and Plants under Domestication, of species. (Vol. I., page 290), brings forth most striking evidence that the black winged bird is nothing but a variety of the common one; but the same year, 1868, Mr. Swinhoe is reported to say, P. Z. S., page 530, that he had also seen there (the little known island of Hainan) in confinement the black winged peafowl (Pavo nigripennis, Sclater), and had subsequently ascertained that this was the ordinary species of Cochin-China, and in a note, page 531, references are given to Mr. Darwin's work, and also to P. Z. S., 1860, page 221, and 1863, page 123. Now all naturalists will allow it is very unsatisfactory to leave this matter undetermined if the truth can be obtained. If I may venture an opinion on a point where two such noted men are at variance, I should say that I suspect Mr. Darwin to be in the right in regarding these two birds as of one and the same species; but that the bronzed type may be one belonging to the common peacock, likely to

appear at any time where many are kept in a domestic state, and, perhaps, not unlikely to appear among wild flocks, and thus form a geographical variety, in somewhat the same way that chequered marking occurs on certain rock doves; if so, it is by far the most remarkable case of the kind as yet recorded among birds, but, perhaps, not altogether an isolated one, but only an exaggeration (as it may be termed) of what takes place in the "Archangel "Pigeon" and "East Indian Drake," where the metallic lustre extends beyond the normal bounds, the feathers being at the same time of a darker hue than in the wild originals. I may here remark that having of late years turned my attention to two birds (Chinese Goose and Musk Duck) whose history is meagrely given in books, and their portraits almost universally omitted, I have kept these birds alive, and have copied out such passages as I could find relating to them in popular and other works, and have come to the conclusion that the curious collection of extracts I have made requires very serious alterations ere they could be worked up into anything like a correct history of these two birds. If the thoughts I have endeavoured to express do not plainly prove that the study of domestic animals ought to rank as a distinct branch of zoology, I think they all tend to shew that there are reasons for holding such a doctrine; and I trust in submitting these few remarks to the public, they may meet the eyes of some who are both able and willing to treat the subject more regularly, pointedly, and with greater effect than lies in my power.

I shall now proceed to the second part of the task I have undertaken, and make some observations concerning the ways and means of accomplishing the object I have in view. If it be true that the study of domestic animals be rightly a distinct branch of zoology, then it is but reasonable to mete out to it the same treatment, that branches of natural science more fully established have received, or are receiving. When it is desired to accomplish any important event, a company is usually formed, rules made, and subscriptions gathered, to meet the necessary expenses. In scientific matters such companies are generally called societies or associations, and are composed of members (often of more than one grade), some few of whom do the chief part of the work as officers, and to them is intrusted the task of bringing out the publications of the society. Everyone has heard of the Zoological Society of London; but, besides this, there are a host of independent ones for the minor divisions of zoology. Why, then, should there not be a Society for the Promotion of the Study of Domestic Animals formed, under some convenient title, to meet periodically for the purpose of hearing papers, collecting evidence, and transacting such business as would be sure to arise? If a few of the most noted zoologists of the country would exert themselves in the matter, and give it the sanction of their names, it would probably not be long ere a very fair number of men were gathered together into fellowship with them. Public interest might be enlisted in the object of the society by popular lectures in various parts of the country, and great assistance might be rendered by the authorised professors and lecturers of zoology in our Universities and schools, if they would allow one lecture annually of their course to be on domestic animals, and set one question on the same subject in their examination papers. If these things should happen, then probably another want would soon be perceived, and supplied, that of a convenient text-book on the subject, moderate in size and price, scientifically correct, yet so popular in style as to insure a wide circle of readers. I wish the Society for Promoting Christian Knowledge would take the hint, and bring out one more volume on zoology, in addition to those most useful ones that have appeared of late years. As to the Zoological Society, it is very evident that it has it in its power to give the greatest assistance in many ways towards advancing the study of domestic animals as here proposed, an independent volume, uniform with its proceedings, containing plates of the domestic animals and their wild originals alive in its gardens, together with a short account of each, would indeed be most valuable; it would awaken an interest in such animals in the fellows and friends of the society, which would, doubtless, tend indirectly to the increase of such specimens, and certainly to the advance of the science in one too much neglected direction. If such a society as I have proposed should ever be founded, I think it would be folly for it to attempt a collection of live animals in imitation of the example set by the Zoological Society; far wiser would it be to take advantage of what exists and flourishes, and endeavour by all lawful means to extend its usefulness. Very different, however, is the advice I should give on another means of advancing the study of domestic animals, which is yet to be mentioned, and which has been saved to the last, because it appears the most important. Nothing at present exists worthy of the name of a museum of domestic animals; some of the more modern institutions come the nearest. they display the products of animals, in various stages, up to the manufactured article; but they do not embrace all domestic animals, nor set them forth in such a way as it seems advisable that they should be displayed to those who would study them scientifically. Some day their scope may be enlarged so as to

adapt them to this object; but the probability is that several generations may pass away, if we be content to merely hope that such may be the case; active measures on this point seem the wiser course ; it is open to any small band of naturalists to start such a museum independently of any existing one, and if the experiment answers, others are sure to follow; the day of small things is not to be despised, a beginning must be made, as once there was to those museums that are now the glory of the nation. They arrived not at their present fame suddenly, but by the labours of their officers and the liberality of many donors, and in the same toilsome way alone can it be hoped to raise such an one as I am advocating. Very many, doubtless, are the odd specimens scattered far and wide that would be eligible and might be obtained, but probably very few collections of series of objects exist, that could be expected as early donations; it must grow little by little, by small additions from various friends in divers parts, and the more its existence and object became known, the more rapid would be its increase, it would be so different in many ways from existing institutions that it would take some little time for the public generally to become aware what specimens would be most acceptable; but an intelligent and active secretary might soon make known what was most wanted, and many responses would doubtless ere long reward his labours; and he would have to use a considerable amount of tact and judgment to prevent being overpowered by a multitude of comparatively worthless specimens. As to the building, nothing must here be said, further than any good-sized conveniently placed room might serve as a nursery where the collection could be formed, till more space should be required, then would be time enough to think of promotion; it might perhaps follow hard on the heels of some other department that had the start in the race, and require a larger habitation. But if a start is to be made, it must take place somewhere, and where would be the best spot I will not pretend to say, but will venture to state where of all others I should like to see the movement begin, and the place I had in my own mind when I made the above remarks, of the proposed museum moving on in the wake of some one further advanced. Whatever may be said in favour of other places, I must confess I should be the best pleased to see Cambridge taking the lead in this matter. Many are the museums there congregated together, and it would help to complete the set; whether it should become eventually an independent institution, or a department of the zoological one established there during the last few years, must be left for time and circumstances to decide. I am told that the new geological museum is a

sufficient undertaking for the present time, but I beg to differ from my wise counsellor, (who, by the bye, has expressed his agreement with me about the desirableness of such a museum as I propose), and to hope that amidst impending changes, an humble space might be obtained wherein the nucleus of a museum of domestic animals might be formed quietly, and got into a state of readiness to move on into larger questions as soon as opportunity occurred. I feel that I am treading on rather delicate ground, and running the risk of being considered impertinent, in thus speaking plainly • about a thought that has long been in my mind. To me it appears a "happy thought" that my own University should take the lead in this matter, and I can truly say I cannot see my error in proposing that Cambridge should do what appears to be for her special honour, as well as for the advancement of science; whether the movement shall begin there, and when and how the necessary arrangements shall be got through, others must determine; yet in passing I may observe that Cambridge (with the exception of her sister University) possesses one peculiar advantage over all other places. She has members scattered broadcast over the land, who doubtless would be both able and willing to render assistance in the way of collecting and preparing specimens, lecturing, and otherwise encouraging the development of such a museum in particular, and the advance of the study of domestic animals in general. To me the machinery seems ready at hand for establishing the study of domestic animals as a distinct branch of zoology, and starting a museum of such animals; all that is wanted is for some leading men to put the parts together, and the affair in motion, and it would be sad to think there were not those in Cambridge equal to the task, if they could but be brought to see what is needed, and urged to undertake it; doubtless there are, and I heartily trust nothing I have said will give offence to any there nor elsewhere, for I feel that the remarks I have made might come better from certain others, but some one must speak first, and having after much waiting taken upon myself to broach the subject, I can but trust it may become ventilated.

It only remains for me to give a rough list of the kind of specimens such a museum as I propose ought to contain :---

- I. Fossils of domestic animals, and those nearly related, or casts of the same.
- II. Copies of ancient monuments and pictures, and other antiquarian records relating to domestic animals.

III. Pictures and diagrams of various breeds, carefully selected, to shew their several peculiarities.

IV. Series of skulls of domestic animals, to shew alteration

in form, size, &c., with reference to change of disposition, temper and intellect, caused by domestication.

- V. Heads of larger mammals, and skins of the same; bird skins prepared to remain as such; a few well mounted specimens might be desirable, but their number should be limited, on account of expense, space, &c.
- VI. Acknowledged and supposed wild originals of domestic animals.
- VII. Hybrids of domestic animals between themselves and wild ones, and any cross-bred specimens and accidental varieties of interest.

The space and expense required for the proper display of such an amount of such specimens as might be obtainable, could be in a great measure regulated by the ingenuity of those intrusted with the museum arrangements. I suppose most would allow that Mr. Darwin is one of the greatest living authorities on the subject of domestic animals; it is therefore a satisfaction to me to know what his thoughts are concerning a museum for their display, and with his words contained in a private letter to myself (in reply to one asking his advice whether the matter should be brought publicly forward) I will conclude, he says, "You are quite at liberty "to state that such a collection as you propose would be, in my "opinion, very valuable and interesting."

WILBY RECTORY, NORFOLK, 1875.

ROBERT HABDWICKE, PRINTEB, 192, PICCADILLY, W.

