

agencies that the unmodified form of the same species, but better than other rival organisms that may be its competitors in the struggle for existence.

I make these remarks without any desire to press the conclusion to an extreme length. I am not one of those more Darwinian than Mr. Darwin himself, who believe that the theory of Natural Selection explains everything, and has left no mysteries unsolved. I feel no doubt but that very many modifications arise that do not perpetuate themselves by the survival of a sufficient number of similarly modified individuals, even in cases where the variation may be slightly favourable; but I cannot admit the validity of an argument that goes to the very root of the principle of Natural Selection, and leads, by the appearance of exact reasoning, to a result that every naturalist feels to be absurd.

In truth, it is impossible to assign any limit to the amount of probability in favour of the preservation of a new variety. In the absence of disturbing causes affecting the equilibrium which the conditions hitherto existing in a given region tend to establish between the numbers of each species, it may be safe to assume that the probability of any new variety establishing itself is but small. But let that equilibrium be disturbed—let some hitherto unknown plants spread widely, as so many European weeds have done in Australia. This must lead to a corresponding diminution in the number of individuals of the previous vegetable inhabitants of the country, and a corresponding reduction among the animals that fed upon them. Let one of these animals be modified so as to be able to derive nourishment from the intrusive species. Is it not evident that the chance of its survival, and that of its similarly modified descendants, would be so great as to approach to certainty, unless the modification happened to bring with it other counterbalancing disadvantages?

JOHN BALL

THE USE AND ABUSE OF COMPLIMENTARY NAMES

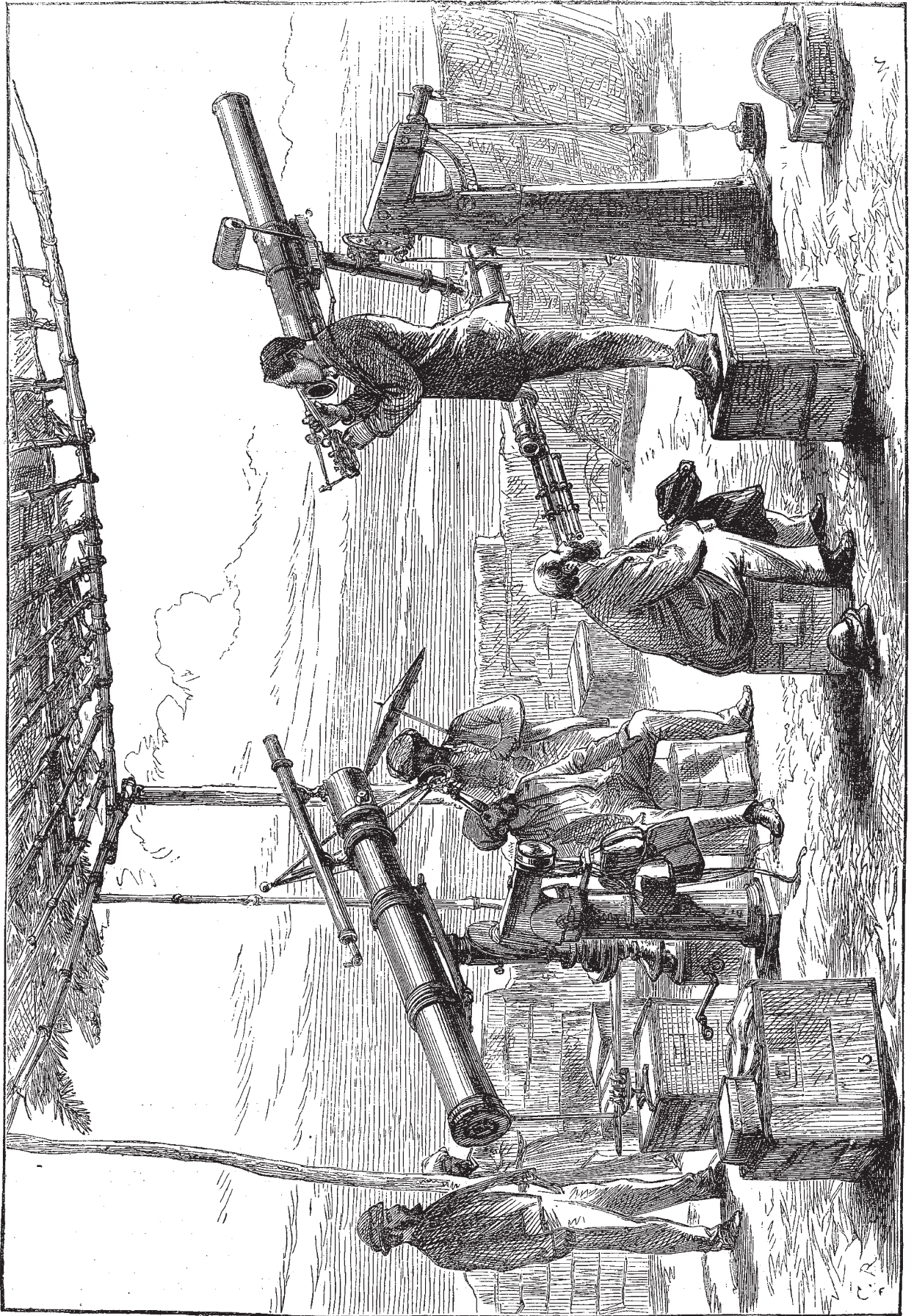
THOSE whose fortune it is to work in some particular branch of science which has not been by any means exhausted, and to encounter daily some new form from an unexplored region which seems to warrant recognition as a new species, are often in difficulty to obtain a suitable name, one which shall distinguish the new species from its congeners, or give indication of one of its most prominent characteristics. It would seem that some (I fear many) are not so fully impressed as they should be with the importance of giving appropriate specific names to new species. "Trivial" names is in many cases an accurate designation. When a new name has to be given, it seems to me that the first effort should be directed towards applying a name which has at least some connection with the object to which it is applied, and if possible indicate one of the features by which its specific distinction is established. In very large genera this will often be difficult, but seldom impossible, if sufficient reflection be permitted. This presupposes, of course, clear notions of what are the distinctive features of the new species, and something more than a mere superficial knowledge of its congeners. The custom of giving complimentary names has considerably increased of late years, and seems almost to have culminated in absurdity. It is never a thankful office to impute blame, or point out the failings of others, and I should never have ventured to draw attention to this subject did I not conceive that the application of complimentary specific names has become an abuse which needs to be protested against. I am willing to concede that the occasional dedication of a new species to some acknowledged authority, one who has published a monograph of the genus, or who has identified himself more or

less with the subject, may be a graceful compliment; but even this should hardly supersede a name indicative of some special feature in the new species. My own feelings are in favour of wholly restricting such compliments to generic names. But wherefore should a mere collector, one who has stumbled over a new species by mere accident, by collecting everything that came in his way of a particular kind, unable perhaps even to recognise generic distinctions, be flattered by having his name attached to the new form by some one who has had all the scientific labour in examining, describing, and naming it for him? Has science no higher aim than that of scattering compliments? It must cause many a smile to pass across the countenances of the unscientific if they open a new cryptogamic flora, a monograph, or even glance through a volume of some scientific journal, to see on one page how Mr. Brown ventures to name something new in honour of his friend Mr. Robinson, and a few pages further on Mr. Robinson returns the compliment in favour of Mr. Brown; or in another case how in five or six genera, extending over as many pages, the same "indefatigable collector" is honoured by having his name as many times repeated, as if new species were only so many pegs on which compliments are to be suspended. My own experience is very much restricted to cryptogamic botany, and my remarks may be much less pertinent to other branches of natural science. Zoologists may not be addicted to such forms of flattery. Continental mycologists are certainly very great sinners in this respect. My object in drawing the attention of readers of NATURE to this subject is to protest against this "abuse of complimentary names," and to ascertain if some definite restriction cannot be placed upon this tendency to encumber our lists with an array of names which convey only one meaning, and which I would designate "flattery names." I hardly think it necessary to cite particular instances, as a question of this kind should be decided upon its merits, and without the introduction of personalities. The sceptical should make the experiment with some recent volume containing descriptions of new species. In one contingency, I think that it is not only admissible but advisable to use a complimentary name. If an author describes a species under a name which has already been adopted in the same genus, it would be very inconvenient to have the one specific name applied by two authors to different things. In such a case it is the custom for any one who may be working up and publishing a synopsis of the genus to suppress the most recent of the two specific names, and apply to it the name of the author who unconsciously fell into the error. Provided always that he recognises the species having priority of name as a valid member of the genus, there cannot be much abuse of this recognised practice, against which I have nothing to urge. It would be simple folly to make laws which there is no power but "common sense" to enforce; and no decision which I may determine upon will be binding upon any one save myself; yet I cannot but regret that any who have laboured year after year in love for their own special branch of science, often following it for its own sake alone, through many sacrifices, should be tempted to employ the knowledge they have so acquired as a means whereby to compliment their friends or flatter their inferiors, forgetful of the practical sarcasms that they are hurling at their own pursuits.

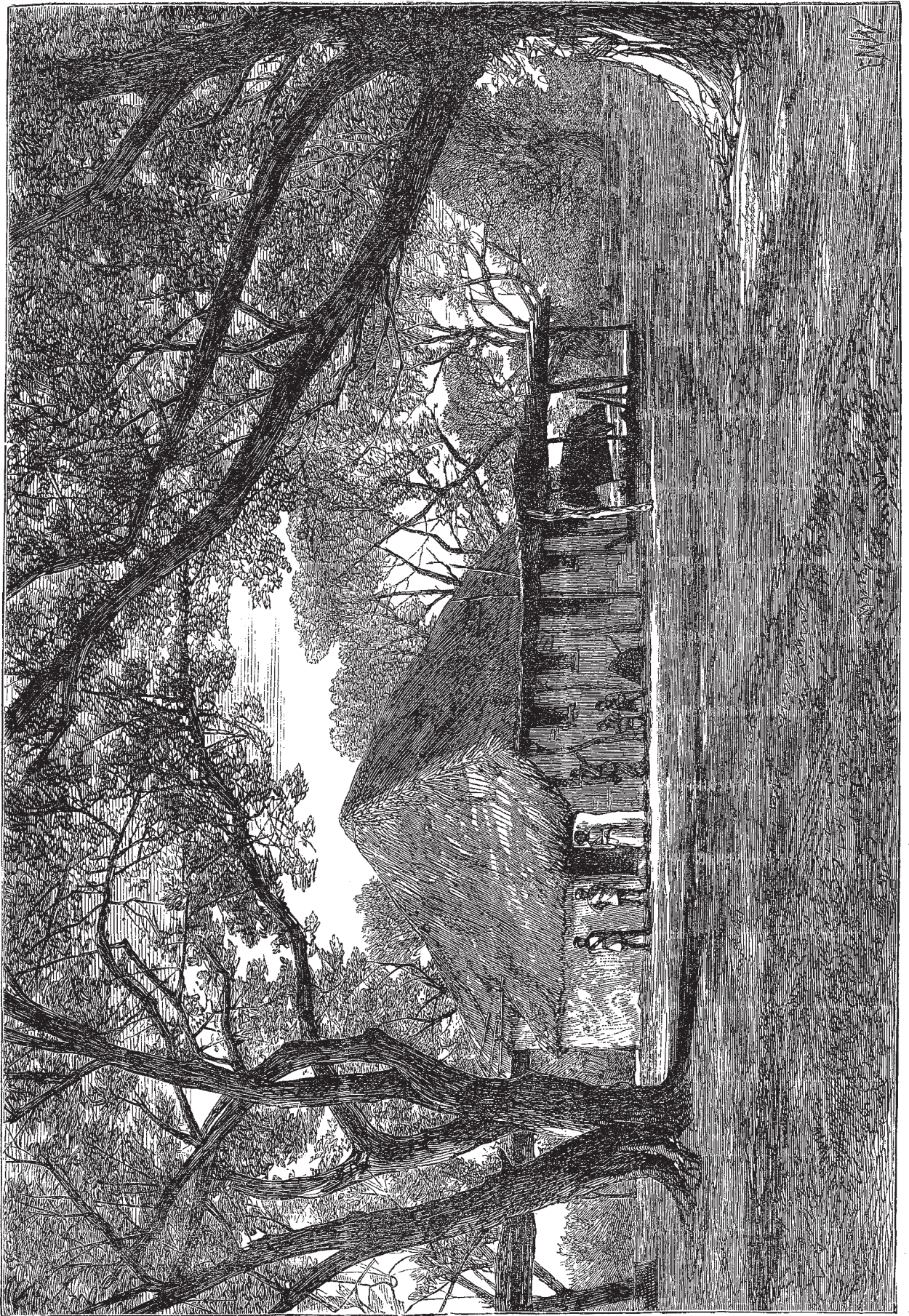
M. C. C.

THE ECLIPSE OBSERVATIONS AT BEKUL

THE illustrations which accompany this, for the loan of which we are indebted to the courtesy of the Editor of the *Illustrated London News*, are from photographs of the Eclipse party stationed at Bekul, taken by Mr. McC. Webster, the Collector of South Canara. The first represents the fort in which Mr. Lockyer and Captain



WAITING FOR THE ECLIPSE



THE BUNGALOW AT BEKUL, CANARA

Maclear had erected their instruments. Mr. Davis's photographic and Dr. Thomson's polariscopic observations being carried on at a little distance below. The instruments represented are the $9\frac{1}{2}$ reflector constructed by Mr. Browning, with a mounting by Cooke, and the double refractor, consisting of two telescopes of six inches aperture, mounted on one of the universal stands prepared for the Transit of Venus observations in 1874, and lent by the Astronomer Royal.

The second is a representation of the bungalow which formed the residence of the same party during their stay in India, erected under the friendly shelter of a grove of spreading banyan-trees. The temperature in the middle of the day at Canara reaching commonly to 90° Fahr. within doors, it will be seen how necessary was not only the shelter of the trees for their residence, but the umbrella which a native attendant is holding over the head of one of the observers during the actual time of observation.

ON THE INFLUENCE OF VIOLET LIGHT ON THE GROWTH OF VINES, AND ON THE DEVELOPMENT OF PIGS AND BULLS

GENERAL A. J. PLEASANTON, from Philadelphia, U.S., has been engaged since 1861 with some very interesting experiments on the influence of light, transmitted through violet glass, in developing animal and vegetable life. In April 1861, cuttings of vines of some twenty varieties of grapes, each one year old, of the thickness of a pipe-stem, and cut close to the spots containing them, were planted in the borders inside and outside of the grapery, on the roof of which every eighth row of glass was violet-coloured, alternating the rows on the opposite sides. Very soon the vines began to attract great notice from the rapid growth they were making. Every day the gardener was kept busy in tying up the new wood which the day before had not been observed. In a few weeks after the vines had been planted, the walls and inside of the roof were closely covered with the most luxuriant and healthy development of foliage and wood.

In September of the same year Mr. Robert Buist, a noted seedsman and horticulturist, from whom the General had procured the vines, visited the grapery. After examining it very carefully, he said:—"I have been cultivating plants and vines of various kinds for the last forty years; I have seen some of the best vineries and conservatories in England and Scotland; but I have never seen anything like this growth." He then measured some of the vines, and found them forty-five feet in length, and an inch in diameter at the distance of one foot above the ground. And these dimensions were the growth of only five months!

In March 1862 they were started to grow, having been pruned and cleaned in January of that year. The growth in this second season was, if anything, more remarkable than it had been in the previous year. Besides the formation of the new wood, and the display of the most luxuriant foliage, there was a wonderful number of bunches of grapes, which soon assumed the most remarkable proportions—the bunches being of extraordinary magnitude, and the grapes of unusual size and development.

In September, when the grapes were beginning to colour and to ripen rapidly, Mr. Buist visited the grapery again, and estimated that there were 1,200 pounds of grapes. General Pleasanton remarks that in grape-growing countries, where grapes have been grown for centuries, a period of time of from five to six years will elapse before a single bunch of grapes can be produced from a young vine; while here, only seventeen months after, his grapery had yielded the finest and choicest varieties of grapes.

During the next season (1863) the vines again fruited, and matured a crop of grapes, estimated, by comparison

with the yield of the previous year, to weigh about two tons; the vines were perfectly healthy, and free from the usual maladies which affect the grape. Many cultivators said that such excessive crops would exhaust the vines, and that the following year there would be no fruit; as it was well known that all plants required rest after yielding large crops. Notwithstanding, new wood was formed this year for the next year's crop, which turned out to be quite as large as it had been in the season of 1863; and so on, year by year, the vines have continued to bear large crops of fine fruit without intermission for the last nine years. They are now healthy and strong, and as yet show no signs of decrepitude or exhaustion.

The success of the grapery induced General Pleasanton to make an experiment with animal life. In the autumn of 1869 he built a piggery, and introduced into the roof and three sides of it violet-coloured and white glass in equal proportions—half of each kind. Separating a recent litter of Chester country pigs into two parties, he placed three sows and one barrow pig in the white pen, and three other sows and one other barrow pig in the pen under the violet glass. The pigs were all about two months old. It will be observed that each of the pigs under the violet glass was lighter in weight than the lightest pig of those under the sun-light alone in the white pen. The two sets were treated exactly alike; fed with the same kinds of food, at equal intervals of time, and with equal quantities by measure at each meal, and were attended by the same man. On the 4th of May, 1870, the six sows, being weighed, the following conclusion was obtained:—

	Under the violet pens.	Under the white pens.
November 3, 1869 ...	122 lbs.	144 lbs.
March 4, 1870 ...	520 lbs.	530 lbs.
Increase...	398 lbs.	386 lbs.

Consequently, although the pigs placed under the violet pens actually weighed 10 lbs. less than those under the white pens; yet, taking into consideration the 22 lbs. less which the first pigs had previously weighed, there is an actual gain of 12 lbs. The two other barrow pigs offered nearly the same result.

The next experiment of General Pleasanton was with an Alderney bull calf, born on Jan. 26, 1870. At its birth it was so puny and feeble that the man who attends upon his stock—a very experienced hand—told him that it would not live. He directed him to put it in one of the pens under the violet glass. In 24 hours a very sensible change had occurred in the animal. It had arisen on its feet, walked about the pen, took its food freely by the finger, and manifested great vivacity. In a few days his feeble condition had entirely disappeared. It began to grow, and its development was marvellous. On March 31, 1870, two months and five days after its birth, its rapid growth was so apparent that, as its hind quarter was then growing, he had it measured. Fifty days afterwards it had gained six inches in height, carrying its lateral development with it. The calf was turned into the barn yard, and manifested every symptom of full masculine vigour, though at the time he was only four months old. He is now one of the best developed animals that can be found anywhere.

This is only a very short *résumé* of the third edition of a pamphlet published by General Pleasanton, entitled, "On the Influence of the Blue Colour of the Sky in Developing Animal and Vegetable Life: as illustrated in the Experiments of the Author between the years 1861 and 1871" (Philadelphia, 1871). 8vo. 24 pp.

The account of it which I had addressed to the French Academy was followed by two different notes from Cailletet and Bert. In my next article I will examine them, with some references to the explanation of General Pleasanton's experiments.

Paris, Jan. 10

ANDRÉ POËY