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Report of the Director of the Central Park Museum, 1878.

This report, recently issued, shows that during the past year there were added to the collection, through donations, purchases, deposits, exchanges, and births in the menagerie, 147 mammals, 169 birds, and 8 reptiles. The total number of animals exhibited during the year was 942. Most noteworthy of the animals that came into possession of the menagerie may be mentioned a fine pair of guanacos, received in exchange for a lion bred in the park. Among the animals placed on deposit that deserve particular remark are three polar bears (no specimens of which have been exhibited since 1875) and one pair of brown hyenas, the first ever brought to this country. During the latter part of the year, 8 Indian and 5 African elephants (the latter quite young and ranging from 40 to 60 inches in height) were exhibited, and attracted great attention.

Of the 107 animals born in the menagerie during the year, the most notable was that of a monkey, since it is very rarely the case that these animals breed in confinement. Losses by death have been few, and at the close of the year there were 706 animals on hand, valued at $71,966; of this amount, $13,371 was the property of the department, and $58,591 that of exhibitors.

The greatest economy has been practised in the management, and, as compared with the expenses of the preceding year, a reduction of $4,081.79 has been effected. In an appendix to the report, the Director gives a classified list of the animals in the menagerie, with both their scientific and common names, and also a catalogue of the books and periodicals which he has thus far collected as a nucleus for a library.

A SAILING RAILWAY CAR.

"The Force of Wind in the Motion of Sails may be applied also to the driving of a Chariot, by which a Man may sail on the Land, as well as by a Ship on the Water," remarks Bishop Wilkins, in the second book of his "Mathematical Magick," printed at London in 1648. Such chariots, he goes on to explain, have been used from time immemorial on the plains of China and also in Spain, but their most remarkable success has, says the learned author, been achieved in Holland, where "it did far exceed the Speed of any Ship, though we should suppose it to be carried in the open Sea with never so prosperous Wind: And that in some few Hours space it would convey Six or Ten Persons, 20 or 30 German miles, and all this with very little labour of him that sitteth at the Stern, who may easily guide the Course of it as he pleaseth."

The astonishment of the good Bishop and his cotemporaries at the speed attained may well be realized when it appears that Dutch sailing carriages, constructed as shown in Fig. 2, next page, accomplished a distance of 42 miles in two hours. This was an unheard of speed in those days for any means of locomotion. "Men ran before it seeming to go backwards. Things which seem at a great distance being presently overtaken and left behind." Until railroads were invented, without doubt the wind carriage outstripped all other means of traveling; and it is perhaps a little anomalous that more efforts were not made toward its improvement. Bishop Wilkins himself made an effort in that direction by rigging a wind mill in the vehicle, whereby "the Sails are so contrived, that the Wind from any Coast will have a Force upon them to turn them about," and he proposed to gear this contrivance with his wheels, and "consequently carry on the chariot itself to any Place (though fully against the Wind) whither it shall be directed." This same thing was reinvented a couple of years ago, in this country, as we noted at the time, and perhaps it might be uncharitably inferred that if, after the labor of two and a quarter centuries, our inventors could do no better than reproduce the venerable Bishop's notion, the *ultima Thule* of originality in wind carriages must be close at hand. Yet in reality the ice boat is probably the offspring of the wind-impelled land vehicle; and the little carriages to be drawn along by huge kites, such as many an ingenious school boy has constructed, are allied to it.

It is curious to note, however, that while to the railroad is owing the abandonment of the wind carriage, to the same agency it now seems likely that its rejuvenation will be due. Wind vehicles are already in use on the long stretches of tracks which extend over the Western prairies, and the

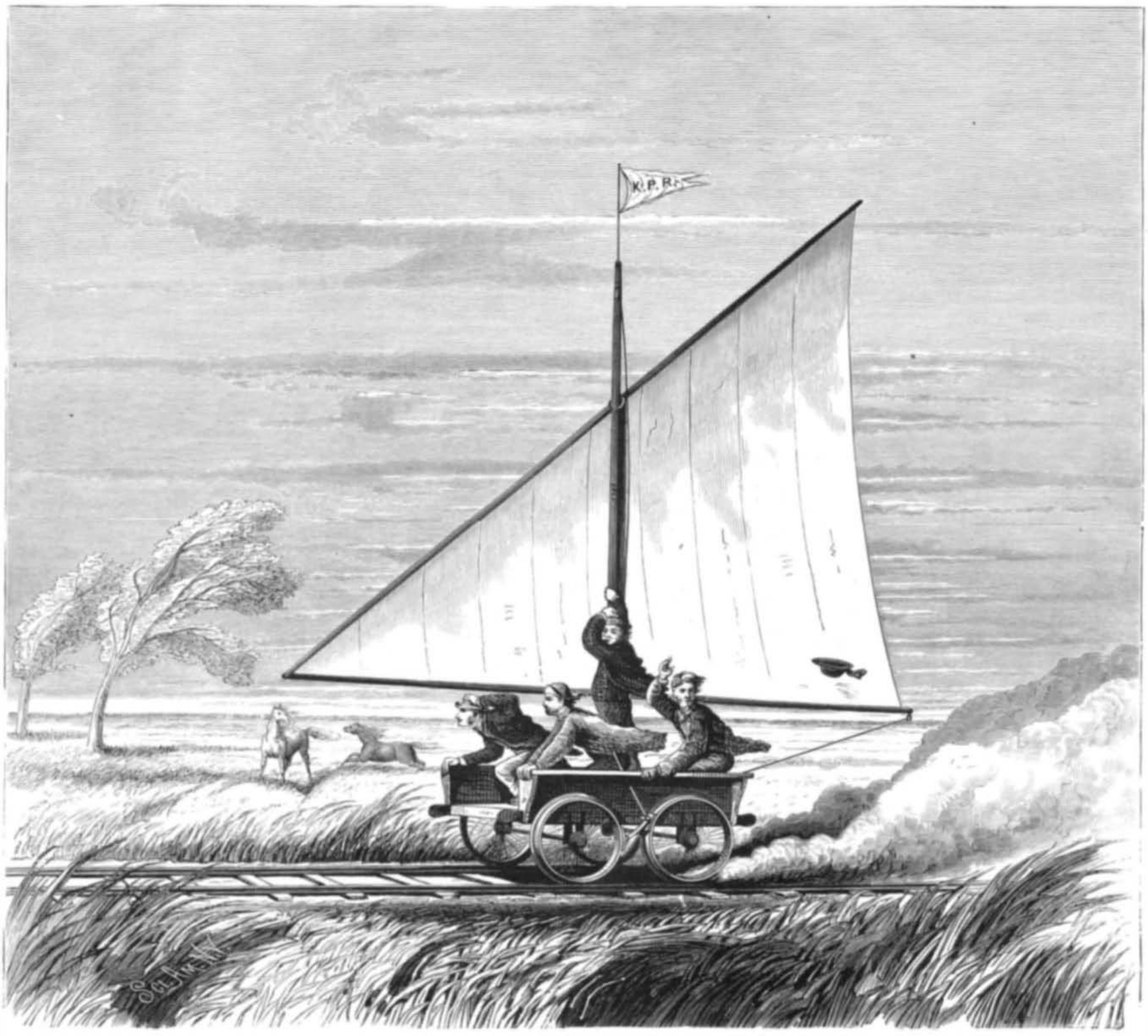

Fig 1.—SAILING CAR ON THE KANSAS PACIFIC RAILROAD.

speed attained is said to rival that of the fast express train. We are indebted to Mr. L. O. Wood, of Hays City, Kansas, for the photograph from which our engraving of a sailing car, devised by Mr. C. J. Bascom, of the Kansas Pacific Railroad, is prepared. The vehicle is said to average a speed of 30 miles per hour, and, with a strong breeze, to travel at the rate of 40 miles in the same period. This last speed was reached with the wind right abeam. A distance of 84 miles has been passed over in four hours, the car sailing part of this time close hauled and over disadvantageously curved track.

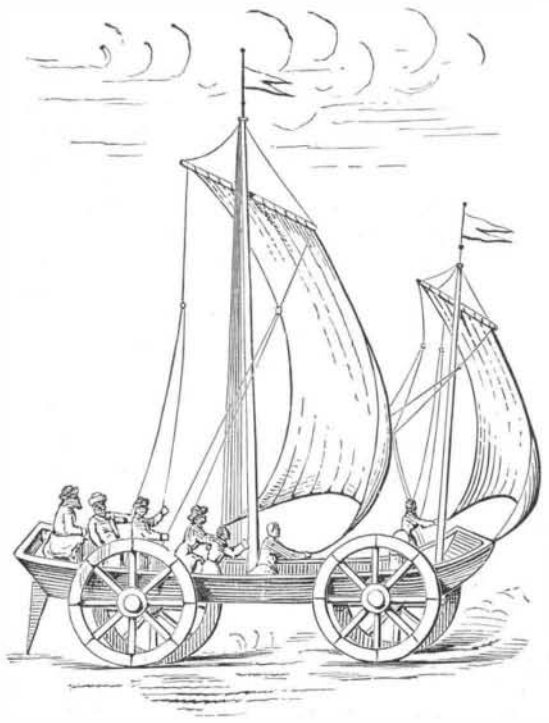

Fig. 2.—SAILING CHARIOT.

The vehicle has four wheels, each 30 inches in diameter, is 6 feet in length, and weighs 600 lbs. The sail has two booms, respectively 14 and 15 feet in length, and an area of about 81 square feet. The mast is 11 feet high, tapering from 4 inches square at the heel to two inches at the truck. It will be obvious that many of the laws applying to the ice boat apply equally well to the sailing car. A little consideration will show that when the latter is sailing at 40 miles per hour it is traveling faster than the wind that impels it, and this is constantly the case in ice boat sailing. On the other hand, ice boats always sail best close hauled, in fact the sheet is almost constantly kept flat aft; the sailing car, as stated above, goes fastest with the wind directly on the beam or side. Of course the difference is due to the greater resistance offered by the larger and more elevated surfaces of the car body and its occupants, and to the friction of the axle journals, which probably, under ordinary condition, is sufficient to prevent the sailing car ever attaining the ice boat's speed.

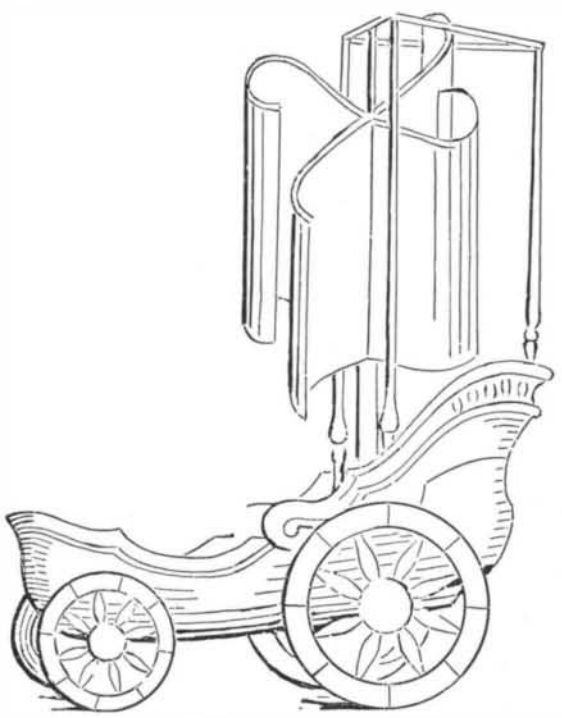

Fig. 3.—BISHOP WILKINS' CHARIOT.

Mr. Bascom informs us that his car has been in active operation on the Kansas Pacific Railway for the past three years, being employed to convey repairing parties to pumps, telegraph lines, etc., along the route. It is of course exceedingly cheap to construct and maintain, and saves the labor involved in running a hand car.

HERR F. SIEMENS, of Dresden, has succeeded, it is said, in remedying the tendency of hardened glass to shatter itself without any apparent reason. He has discovered that the unpleasant effect is caused by over-hardening, which can be detected by the prevalence of violet tints exhibited by the polarizer when the glass is examined.

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(Illustrated articles are marked with an asterisk.)

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EVERY MAN HIS OWN KEELY MOTOR.

John Aylwin Bevan, M.D., has settled it. Now it is perfectly clear what it is that makes people die so soon. It is clear, too, that it is quite unnecessary for the human machine to run down, so to speak, so much before its time. Indeed, thanks to Dr. Bevan's discovery, it is entirely our own fault if we do not straightway bring down our rate and style of living from its present destructive high pressure speed to something like the slow serenity of tortoise life, or at least to the long drawn out existence of semi-imbecile guests in public asylums for aged paupers. Everybody has noticed how their lives run on and on, like Tennyson's brook, "forever," comparatively speaking; but no one before Dr. Bevan ever satisfactorily explained the secret of their staying power, or undertook to demonstrate the superiority of their life conditions.

Scientific physiologists pretend to tell how our life forces and activity are kept up by the transformation of food within the system. So much food, in such and such complex chemical combinations, reduced to such and such lower combinations, evolves so much force to carry on the work of living. It is all as simple as a sum in arithmetic; but, Dr. Bevan indirectly demonstrates, it is all wrong. Our supply of living energy is not kept up that way. Instead of supplying force, the food we eat diminishes our force; and the more forceful the food, according to the physiologist's rules, the more rapidly it hastens the exhaustion of our original stock of energy, our thermo-motoric bankruptcy, so to say; in other words, our death.

Dr. Bevan has discovered a new physiological force, which he calls thermo-motor force. He has discovered also that this newly discovered force resides in the medulla oblongata, making it a sort of physiological Keely motor. Just as a little water in Keely's machine supplies an incredible (though exhaustible) amount of physical force, so this little lump of brain matter is endowed with, and furnishes from its miraculous store, all the thermo-motor force required to keep the bodily organization running from birth to death; a supply which with proper husbanding would suffice to keep us alive for ages. How or when the thermo-motor force gets into the medulla is not explained, but that is no more an objection to Dr. Bevan's theory than is Keely's neglect to explain how so much force gets into the water he uses an objection to his. The grand result obtained is the thing to think about.

The importance of Dr. Bevan's discoveries, as indicated by the space it gets in newspaper reports, justifies an extended statement of them here. It appears that "the medulla has a certain quantity (amount not stated) of stored-up thermo-motor force in a state of rest, which once expended in motion can never be restored." "This force is produced (?) in the same way as the electric current, by the application of conductors of force to the galvanic battery, and every time our hearts contract, every time we move, we lose a part of that stored-up force which once expended in motion can never be replaced." "Thermo-motor force resides in the medulla oblongata, and, being essential to the digestive process, wields the power of life and death; for upon its integrity depends the preparation of those fluids which nourish the body, diffuse through it animal heat, and defend it against the destructive action of oxygen. Everything that tends to weaken this force helps to hand over the body to destruction;" a couple of years sufficing on the average to enable oxygen to do its fatal work, when once it gets the upper hand. "How jealously, then, should mankind economize this force!"

"In what way?" does the reader ask? By eating cereals and refraining from a flesh diet, Dr. Bevan replies. The red-blood cells carry oxygen to every part of the body and release it in the capillaries, where it performs its functions of decomposing the tissues and brain and releasing thermo-motor force. "The more freely, therefore, these cells are supplied, the quicker the rate of decomposition and the release of this once-lost-never-regained force, and the sooner its exhaustion—that is, death—must occur," and *vice versa*. Consequently if you want to live long eat vegetable food, and thereby reduce the number of your red blood cells. The white (that is, cold) blooded shall live long and prosper. For animal food multiplies red blood cells rapidly, and vegetable food slowly, and the rate of expenditure of thermo-motor force corresponds. Therefore, we say, eat roots!

This philosophy is impregnable. It is as if Mr. Keely should say: "Here, gentlemen, is a pint of water in my machine. Stored up in it is forty million horse power, more or less. Every time you agitate the machine force is evolved, and of course the less you agitate it the longer your power will last. Be prudent, therefore, and do not squander your latent wealth!"

We fear, however, that Dr. Bevan is not prudent. Some parts of his last lecture read as though he had recklessly indulged in a mutton chop or some other blood heating compound. Witness the following: "By the help of the discovery of the thermo-motor force man will become his own savior, for he will now need no physician to teach him self-control. For just in the same way that the discovery that the principle of 'do as you'd be done by,' based on love of others, underlies the thousand varieties of religious creeds, will overthrow the wily devices of priestcraft and the evils of fanatical hatred and persecution among races of different religions by causing them to recognize that they are all members of one great brotherhood, so the discovery of thermo-motor force, and that waste of said force is the concealed cause of every form of disease and its corresponding prin-