

JOHN STEVENS

BY ARCHIBALD DOUGLAS TURNBULL

"*Genius has too fine an edge for common use.*" The quotation is from the writings of John Stevens, that man of extraordinarily varied interests and activities, whose long life of nearly ninety years made him a young officer of the Revolution and a venerable sage in Andrew Jackson's day as President; whose rich, colorful story has for a century been hidden under dusty documents in half a dozen horsehair trunks. In this sesquicentennial year of our independent existence, when the Federal Constitution and its Amendments are under such heavy fire, it has been thought appropriate to exhume the history of one of the most constructive of our early nation builders.

In the last issue of *THE NORTH AMERICAN REVIEW*, Mr. Francis Thorpe discussed John Adams and his *Defense of the Constitution*. It was this small book which inspired John Stevens to set forth his own views and, like the "Cato" and the "Junius" of his day, he did so under the screen of anonymity. His carefully considered pamphlet, in which he ventured to disagree with the veteran New Englander and his political system of "Orders" and "Balances" as a method of government, was published as the work of no more definite a citizen than "A Farmer of New Jersey," with the result that it was generally attributed to the brilliant pen of the Revolutionary Governor of that State, William Livingston. Where copies of the pamphlet exist in libraries and historical societies, they are thus catalogued. But Jefferson made a note upon his own copy, "Written by John Stevens," and the recent unearthing of part of the original manuscript places the question of true authorship beyond all doubt.

"Good government," runs the pamphlet, "demands constant activity. The people ever have been, and ever will be, unfit to retain the exercise of power in their own hands; they must, of necessity, delegate it. Hence the immense importance of a *representative* legislature and a Tryal by Jury."

A little farther along, this point is stressed. "After all, it is by sober common sense and strict attention to business that the affairs of this world must be regulated." To which he adds that comment upon genius which has already been quoted.

The three Amendments to the Constitution which he advocated are not without interest. The first suggested that the President should not be doomed to make his appointments "by and with the advice and consent of the Senate." Apart from the mere dignity of the office, demanded Stevens, why should the Senate have a voice in choosing the President's advisers, while retaining the right to impeach him if he proved ill advised? Those sharp political squabbles which have so often arisen between the Executive and Congress over appointments, in our own day, would seem to add some weight to this proposal of long ago.

Secondly, Stevens suggested that the Chief Justice should hold his own office "during good behavior" and that he should have the naming of his assistants. In at least the first half of this proposal, there were found to be enough in agreement to bring about the change; the second half is at least debatable. Finally, forecasting in some measure the present powers of Secretary Mellon, a Superintendent of Finance was advocated; this officer to manage all collection and expenditure of public revenue, to appoint receivers of taxes, customs and excise officers, and to form, with the President and the Chief Justice, a board to consider, from three essential viewpoints, all new legislation by Congress.

Recognizing that no national document so momentous as the new born Constitution could be regarded as perfect, John Stevens, nevertheless, wrote to Dr. Richard Price, of London, "Yet the features of it are, I trust, so happily blended and harmonized as to produce one *whole* which, for strength and beauty, I may venture to call unrivalled."

Among these ancient papers,—some, alas too far gone in years for present use,—there are long essays upon political economy, none of them without a certain pith. Upon metaphysics, too,—an interest of his later years,—the man has left behind him the manuscript of an entire book of which only the first part went into pamphlets. When yellow fever, in the early eighteen hundreds,

was scourging New York, Philadelphia, and other seaports, Stevens, although admittedly no physician, was an eager deliver into the causes and treatment of the plague. At this time he made to Dr. David Hosack, so prominent in New York's medical and social life of the period, the earliest concrete proposal that there be built, for the accommodation of all the sick or, more especially, for the care of still unafflicted infants, floating hospitals to be anchored in the rivers or down the bay. On almost the same day he was speaking and writing in favor of the first system of watering the streets of the growing city; a system, be it understood, of his own devising, in his capacity of engineering director of the Manhattan Water Company.

Just as Franklin did not live up to the profound teachings of Poor Richard, so John Stevens was privileged to disregard his own sayings. Thus, the genius of which he spoke as too fine-edged for common use was, in his own case, whole-heartedly applied to almost every question, political, economic, or scientific, which commanded the attention of a country less than twenty-five years upon its own feet. To speak of Colonel John Stevens, of Hoboken,—as, in his day, he was most commonly known,—is to name a farmer, a horticulturist, a student of law and medicine, a sportsman, and a great mechanical engineer. To examine him under a microscope borrowed from any one of these professions is to discover him as a man of amazing vision, living, as the saying has it, “a century ahead of his time.” Nor has this same saying often had a more accurate application.

His early opportunities came to him through his inheritance from his father, the Honorable John Stevens, and his grandfather, more simply known as “Mr. John.” The latter had been the first of his family in America, landing in 1699 and bound, like so many other youths of seventeen, his contemporaries, as a lawyer's apprentice, “too doe no damage to his saide Master nor see it to be done of others.” This progenitor of seven generations, in each of which the eldest son has borne his name, served out his time in New York and then pushed over into New Jersey, to marry Ann Campbell, daughter of the proxy and Colonial representative of Lord Melfort, the sharer with the Earl of Perth of the leading position among the twenty-four Pro-

prietors who through Berkeley and Carteret owned the Colony by grace of James, Duke of York.

The second John was a builder of ships and of houses in Perth Amboy; a merchant not averse to commanding his own vessels on their trips to Madeira with flour, or on their homeward voyages with wine casks cramming their holds and piled up to the very bulwarks. Commercial success, afloat and ashore, was for him a preliminary to marrying Elizabeth Alexander, whose father was James, Surveyor-General of New York and New Jersey, keen astronomer, and ardent advocate of free speech. By that marriage, the Honorable John acquired as brother-in-law William, called—mainly upon his own recognizance—the Earl of Stirling; that Major-General of Washington's army who gallops across the pages of every American schoolboy's history. The records indicate that Stirling, Richard Stockton, and John Stevens were the "insurgent three" of Governor William Franklin's Council; the last named writing to the Governor in June of 1776 that, since the dispute with Britain "has arisen to the present alarming situation . . . Your Excellency will not wonder that I should prefer the duty I owe my Native Country to any other Consideration." From that day, his seat in Council was empty, but he promptly found another in the Provisional Jersey Assembly; left this to represent his State in the Continental Congress, and returned to preside over New Jersey's convention to ratify the Constitution of the United States.

This good Anglo-Saxon stock produced the John Stevens with whom we have here most to do. He was twenty-six when the rifles of Lexington rang out, and he was very soon afterward a member of the Continental Army. This service, however, was of short duration, for he was soon appointed the Treasurer of his State—an office trying enough to the soul of any man, in that day of many different monies, when exchange soared or plunged according as an American or a British volley chanced to be effective. Keeping some half-dozen years of State accounts almost literally under his three-cornered hat—whether he chanced to be hanging this in Trenton, Bordentown, Amboy, or Philadelphia—meant, in the end, a considerable demand upon the private purses of both the Colonel and his father before, in the chaos of

settlement and readjustment, the last voucher—written, perhaps, by lantern-light upon the torn flyleaf of a book or the ragged corner of an old indenture—had been paid and cancelled. In this connection, the son is found writing to his father:

As to the Continental money left with me by my Uncle, I have it here, *except nine or ten thousand pounds I borrowed to make up fully the balance due the State.* So that if you can purchase that much for me I shall be greatly obliged to you.

The peace of 1783 brought him back to his birthplace, New York City, where he occupied his father's house in the Bowling Green. With him came his wife Rachel, one of those five beautiful Cox sisters whose likenesses are to be seen strewing flowers at the feet of "The Preserver of his Country and the Defender of Our Daughters," in that quaint old print of Washington's triumphal entry into Trenton. Rachel Cox Stevens was to become the mother of another John, founder and first Commodore of the New York Yacht Club, part owner of the gallant *America* and aboard her when the deck glasses could pick-up, for Queen Victoria, "no second"; of Robert, leading inventor, engineer, and naval architect of his own later day; and of Edwin, practical business man as well as inventor, organizer and treasurer of all of a remarkable family's later undertakings and, of course, founder of the Institute of Technology which bears that family's name.

Hopoghan Hackingham made its first authentic appearance in history when Juet, mate of the good ship *Half Moon*, described it, in 1609, as "a good piece of ground; and hard by it there was a Cliffe, that looked of the colour of white greene, as though it were either Copper or Silver Myne." After the Revolution, it had become a desirable farm land of many acres, put up in 1784 at public vendue because its owner, William Bayard, had been over hasty in changing back into a Redcoat after the Americans had skipped away, in the fog, from the disaster on Long Island which so nearly stopped the war before it had well begun. As Hoboken, Bayard's confiscated estate went to Colonel Stevens for about eighteen thousand pounds.

To him, the present state of that tract could hardly be pleasing. He saw it as a park or country resort, to be visited by those

upon whom the business cares of New York pressed too heavily. "It is my intention," he announced, "to form there a complete collection of all American plants, as well as of exotics." To that end, he planned lawns, orchards, and winding paths around such shrubs as hydrangea and magnolia, flanked by greenhouses of roses and shaded by great trees like those fine old English elms at Castle Stevens, whose heads have long since been withered by the belchings of fuel oil from countless ships below. And that he succeeded, to some extent at least, in his plan, seems clear from Fanny Kemble's diary of years later:

The good taste of the proprietor has made it one of the most picturesque and beautiful places imaginable; it wants but a good carriage-drive along the water's edge (for which the ground lies very favorable) to make it as perfect a public promenade as any European city can boast, with the advantage of such a river as none of them possess.

I think the European traveler, in order to form a just estimate of the evils and advantages deriving from the institutions of this country, should spend one day on the streets of New York and the next in the walks of Hoboken. In the one, the toil, the care, the labor of mind and body, the outward and visible signs of the debasing pursuit of wealth, are marked in melancholy characters upon every man he meets, and bear witness to the curse of the country. In the other, the crowds of happy, cheerful, enjoying beings are of that order which, in the Old World, are condemned to ceaseless and unrequited labor.

We rode like very impudent persons up to the house on the height. The view from its site is beautiful and we had it in perfection today!

Such was Fanny Kemble's opinion. And yet, within a few years of her comments, two of the Colonel's numerous daughters had made up their minds to quit the old family home forever because "New York City has grown up beyond Canal Street and utterly spoiled our view."

It was in about 1787, when his "country" house was finished, that John Stevens first seriously took up engineering. He does not, in his own letters, fully explain why he thus turned away from the law, for which he had been educated at King's College and in which he had long since received his appointment as attorney, signed by Admiral Sir William Tryon, last Royal Governor of New York. The Colonel merely tells his correspondents of the time that he has become interested in studying "the boiler built by Mr. James Rumsey, of Virginia." A casual way,

indeed, to introduce the subject which was to absorb him for the next fifty years.

Rumsey's boiler was merely a two hundred foot pipe, bent into a coil. Upon this, the Colonel, to use his own word, "animadverted" to the extent of expressing the opinion that it would never be kept tight, that its steam space would be so small and so variable, due to the flow of water, that it would be very liable to bursting, and that it could not, at the best, offer enough surface to the heating flame. It therefore struck him that he could design a better boiler, himself.

While he was about this interesting attempt, he read the long-winded arguments of Rumsey and of poor old John Fitch, in which each openly accused the other of having merely copied his own idea for a steam engine to be used in a boat. The difficulty which beset these two in attempting to establish priority was very probably the thing which influenced John Stevens to petition, first the Legislature of New York and then the Federal Congress, for an exclusive right—in short, a patent, under the Constitutional provision for "encouraging science and the useful arts." In America, as in England, the author or the inventor should own the right to the child of his brain. The fruit of this petition was the passing, in 1790, of the first United States Patent Laws, thus making John Stevens godfather, at least, to all later American inventors.

His own early boiler was a multi-tubular affair; a long step forward, with its small bore tubes, opening into heads, or drums, at both ends; with its much greater heating surface for a given size; and with its greater safety and usefulness in that the bursting of one tube would not necessarily wreck the whole. Of course, it was to be years before what we moderns know as the water tube boiler would come into general use, yet the whole principle, as far as men then understood steam and its properties, was embodied in the Colonel's patent of 1791.

In the last decade of the eighteenth century, with the whole country stirred by the birth of the Age of Invention, the most noticeable lack, in America, was that of capable mechanics; opportunities for them in Europe, as compared with openings on our side of the Atlantic, were in striking contrast to the situa-

tion today. Only here and there was to be found anything more mechanically pretentious than a crude mill or forge; tools were largely hand made, in the roughest fashion as occasion required; and "within the thickness of a worn shilling" was the accepted phrase for which our exact science has substituted "machine fit." Of steam engines there were almost none, for such developments as those of Watt and Bolton were by law confined to England. Indeed, the records show only three exported from that country in a quarter century—one for the pump works at Chantilly, France, one for Aaron Burr's Bank under its broad charter as a Water Company, and one, still later, for Fulton's steamboat. In 1796, an American built engine was as much an oddity as the first Ford car.

But John Stevens was undismayed. Self taught in mechanical principles by studying Savery, Newcomen, Watt, he set his heart upon a steamboat of his own. An early sharer of his enthusiasm was his sister's husband, Robert R. Livingston, the noted Chancellor of New York, before whom Washington took his oath as first President, and the accepted head of his widely connected, highly influential family.

These two associated with themselves, as a third partner, Nicholas J. Roosevelt. His share in the work was to be the actual building of the boat, at a spot upon the Passaic River, near the old foundry of Peter Schuyler—a settlement then called Second River but since known as Belleville. There, in fact, the work began, only to come immediately under the burden of differences of opinion.

It was the Chancellor's theory that the engine should drive the boat by pumping water up from under her bottom and out through a pipe in the stern. This, of course, was not a new idea; among others who advocated it was Benjamin Franklin. But both Roosevelt and Stevens considered it would prove inefficient, the former holding that more direct effect would be obtained by putting wheels at the sides of the boat and the latter—ever a step ahead—insisting that a wheel or wheels in the stern would be the ultimate solution.

Livingston's purse-strings were just then far longer than Stevens's—indeed, as far as "ready hard" went, they always were,

for the Colonel could never rest content with but a single progressive activity. Again, it was Livingston, with half a New York Legislature made up of powerful relatives or connections, who had all the influence; he alone could secure from the State the exclusive rights upon the Hudson which would allow him, for "a boat propelled by steam or fire, at the rate of four miles per hour," a monopoly of the river.

"I could wish," wrote Roosevelt to Stevens, "that either your plan or mine could be tried instead." And Stoudenger, the foreman who was to superintend the making and assembling of the mechanical details, remarked: "I will make the drawings and build the boat exactly as the Chancellor wants—but don't blame me if it won't work."

After long argument, the Chancellor prevailed. The crude little craft, finished in 1798, actually did run upon the Passaic. The Spanish Minister and other dignitaries invited to attend the trial trip were first amazed to silence at her actually moving, then stirred to extravagant praise when she made as much as three and a half miles an hour. The Chancellor wrote from Clermont: "I anxiously expect the fruit of our labours in seeing you arrive here at the rate of 5 miles an hour on the day you have set. Mr. De Labeyarre has prepared his battery to give you a salute when you pass Red Hook!"

But the horizontal wheel-and-pump machine was too much for its boat; in a very short time, to the infinite disappointment of all concerned, the pipe connections were torn apart by the racking strain and the seams of the boat itself were started.

Roosevelt's attention wandered off to pumps for the Philadelphia Water Company, and guns for the new frigates, while Livingston soon was absorbed in the duties of international diplomacy and his Ministry to France. At the beginning of the nineteenth century, John Stevens, in the face of several cruelly disappointing failures, still persisted. On the lower lawn at Hoboken he erected a tiny summer house in which he made drawings and long calculations; in the primitive shops of McQueen and others on the New York side he ordered cylinders and shafting on designs of his own. His hope and his purpose may well stand in his own words:

Could we be so fortunate as to hit upon such a mode of applying the steam engine to the purposes of navigation as would enable us to avail ourselves to the full extent of its powers, the reciprocal exchange of the production and manufactures of one country for those of another would result. The earth would everywhere be stimulated to bring forth with its utmost vigor; civilization and the arts would rapidly spread themselves over the whole face of the globe. Then, and not till then, might it be said with truth that man was really master of this world and that everything in it was subservient to his will.

This language he himself called "rhapsody," yet it does express his never-to-be-abandoned object.

"Wheels in the stern" was his constant maxim—today, we might call it his slogan. The sculls and the water wheels of the ancient, ever resourceful Chinese, gave him one hint; the screw of Archimedes supplied another. Though it doubtless could not be claimed for any one man that he actually invented the screw propeller, certain it is that, in its development, John Stevens was thirty years ahead of everyone else.

The single-screw "smoke jack fly," as his friends were wont derisively to name it, appeared in a boat launched from Hoboken in 1803. One of its first casualties was the explosion of its boiler, necessitating the prompt building of another and a stronger. But its main defect appears to have been recognized by the Colonel as poor steering qualities, that later very familiar tendency "to run in circles."

A year later, the Colonel was taking into his confidence that noted Philadelphia physicist, Dr. Robert Hare, Jr., inventor of the oxygen blowpipe. He wrote to him:

My present method is in various respects preferable.

To the extremity of an axis passing through the stern of the boat is fixed a number of arms or wings like those of a windmill. These arms are *made capable of ready adjustment*, so as that the most advantageous obliquity of their angle may be attained after a few trials. It is absolutely necessary to have at least two, *revolving in opposite directions*, to prevent the tendency to rotation which a single wheel gives to the boat.

The italics appearing in this quotation are added to emphasize how far advanced was the Colonel in the proper principle of what he actually had constructed, the first twin screw steam-boat in the world. To look at the rough sketch which he made

upon the margin of this letter to Dr. Hare is to see a surprisingly good representation of the commonplace modern propeller. Moreover, it was not carried upon a shaft through the sternpost, like those of Ericsson and others, so many years after, but supported by struts outside the boat's hull.

Steam pressures of the day were not up to the demands of the propeller. To most experimenters, both here and abroad, anything over ten pounds to the square inch was something to be "viewed with grave concern." When Colonel Stevens sent his eldest son to England, to see Watt and submit the design of a boiler calculated to stand a hundred pounds, the great Briton himself, by then advanced in years, declared the design far too perilous to consider. In point of fact, not enough was known about packings and tight joints, in that early day, to make high-pressure steam at all a comfortable shipmate. Under such circumstances, this first real steamboat upon the Hudson River suffered in efficiency but nevertheless made many trips from Hoboken to the Battery. The lineal motion of its piston was transferred through a yoke to two shackle bars,—as John Stevens called them, though modern engineers will recognize them more readily as connecting rods,—thence to short shafts cogged into the propeller shafting.

The late Professor James Renwick of Columbia, has left this record behind him:

I recollect a crowd collected at the Battery, back in 1804 or 5. When I asked what was going forward, I was told that "Jack" Stevens was about to cross the Hudson in a steamboat. I went down to the pier and saw the boat. The greasy individual in the stern beside Jack was, I believe, Robert Stevens. I could see the engine and the boiler but I could see nothing, above the water, to show how the boat was driven. Long afterward, John Ward, who was in that crowd, told me of seeing the engine and the propellers set up in McQueen's shop. That was the first twin screw in the world and, forty years after it, as luck would have it, we two were on a committee appointed by the American Institute to decide whether Colonel Stevens had invented it.

The "long afterward" came when the Colonel's sons, in 1844, cleaned up the old engine, restored the propellers and exhibited them anew. The boat then made eight miles an hour, a considerable speed when it is recalled that later craft, such as the

Clermont, never claimed more than five and a half. Indeed, as to that, Fulton himself is on record as believing that this latter was about the "maximum practicable and paying speed."

To proceed upon a larger scale became, in 1805, the Colonel's purpose. In view of the boiler difficulties mentioned, he determined to take what he considered to be really a step backward, to adopt Nicholas Roosevelt's suggestion of paddle-wheels. These, said the Colonel, would, without doubt, eventually be replaced by the stern wheel; for the present, however, they would suffice. Accordingly, he laid down his plans for a vessel one hundred feet long, sixteen feet beam, and six feet four "from keel floor to lower deck beams." Provided he himself supplied the beams, planks, engine and machinery, he found that Nathan Sayre, Joseph Morgan, and their associate shipwrights, would build her for nine hundred dollars.

At this promising point, John Stevens ran into a most formidable obstacle. It is, of course, well known to all that Chancellor Livingston came back from France, bringing with him renewed enthusiasm, a Bolton and Watt engine—and Robert Fulton. Equally well known is it that the Livingston influence promptly procured from the New York Legislature a renewal of the grant of the Hudson River for boats "propelled by steam or fire." Before this monopoly had been proved unconstitutional, much bitterness had been engendered, much time had been lost in useless litigation and, in the end, it took no less a person than Chief Justice Marshall to read the law aright and establish federal supervision of interstate commerce. Until that time came, the waters that ran below Castle Point were no longer open to John Stevens.

However, he completed his new boat, naming her, perhaps as hope arisen from the ashes of his plans, the *Phoenix*. With the Hudson denied him, he proposed sending her down the Jersey coast to the Delaware and, to accomplish a voyage then unheard of for a steam vessel, he put her in the hands of Robert, just then turned twenty-one.

On half a dozen sheets, of note-paper size, Robert has left us the laconic story of that voyage. The *Journal of the Steam boat Phoenix's passage* begins:

Sat'y, June 10th, 1809. Cast off from the wharf at 11 o'clock A.M., the wind at S.S.E. a pleasant breeze but foggy. Got up our steam by noon.

So, in brief sentences, it continues, mentioning the schooner, oddly enough sent as escort but soon lost sight of in a gathering gale.

Monday, 12th. Steering for Sandy Hook, blowing very hard, while crossing the bay one of the revolution wheels on the Starboard side gave way at 2 P.M. Anchored in Spermacetti Cove. Shifted the buckets to Starboard.

Day after day there are short comments on the weather, always bad, and an added note of speculation as to the whereabouts of the schooner. For her part, she was carrying on her own struggle with the winds, her crew pretty well convinced that they had already seen the last of "that little tea kettle." But the *Journal* goes steadily, if briefly, on. "Wednesday, 21st, 45 mins. past 7 came abreast of Cape May," and headed up the Delaware in order that Robert might add, under Friday, the 23rd, "Anchored at 9 o'clock abreast Market Street Wharf, Philadelphia." There are scarcely a thousand words in the whole *Journal*, but it was characteristic of Robert Stevens, who inherited his father's brilliant mind without his agile pen, that he should so casually toss off this first hand account of what was destined for a place in history as the first ocean voyage ever made by a steam vessel.

She was stout hearted, that little *Phœnix*. Colonel Stevens had good reason to be proud of her, as the first of a steady succession of Delaware "liners," each faster and more "elegantly furnished" than the last. Later, when the monopoly had been broken, these boats and their younger sisters came back to queen it, in size and speed, upon the Hudson.

As has been suggested, the monopoly fight is an interesting story, though one too long to tell here. Yet it should be noted that correspondence now available indicates an error in the conclusions of those authorities who have held that Fulton, had he been sole owner of the Hudson grant, would have compromised with Stevens. It was Livingston, rather, who had this disposition—quite possibly because he had signed an agreement with Roosevelt and Stevens, as far back as 1800, by which the

three bound themselves to share in steamboat enterprises on the river for the succeeding twenty years. But it was scarcely to be expected that the Colonel himself would compromise, when it is remembered that the condition offered him was his payment of one-third the experimental expenses incurred by the other two, in France. They had, after all, together spent no more there than he, alone, had spent here. For the rest, it appears that Fulton could not brook the thought that any but he, and he alone, could design anything in the way of a steamboat. Upon that rock, all hope of real compromise was split.

Robert, James, Edwin and John; to these four sons and a number of Stockton nephews and cousins, Colonel Stevens could soon afford to turn over the care and management of steamboats, while he bent his own energies to other things. As early as 1807, he accepted the prophecy of a new war with England; to meet it, he designed, with Robert, an "elongated shell" of more accurate flight and greater penetration than the common round cannon ball. Some thousands of these shells were made for the Navy, and their lineal descendants now fill the racks of battleship magazines on all the Seven Seas. With such ammunition, argued the Colonel, the United States should have a whole fleet equipped with engines.

"Thus," said he, "when it comes to the next engagement, our ships will be able to choose their own time to fight and so destroy any possible enemy."

This, of course, is one of the great primary objects of all naval strategy, toward which all study and doctrine, all drill and practice, should always be directed. Yet the opportunity to achieve it, at a bound, escaped the nation for many years because, before the war of 1812, John Stevens occupied this position almost alone.

At this same period, he was experimenting with armor as a protection for ships, in an elementary effort to be carried much farther forward by his sons. But his most important activity, in the light of its bearing upon the future prosperity of his country, was along a line which he hewed out entirely with his own hands.

Among his classmates at King's College, forty years earlier, had been Gouverneur Morris, at this time head of the New

York Canal Commission. To him, the Colonel spoke his mind openly. He asked:

Had we not far better save some of this money appropriated for canals, and invest it in something which, in the long run, will prove more useful? I am aware that today (1812) there are no Steam Rail Roads anywhere in the world, but that is not to say that they will not surely come. Railways will permit a man at one extreme of our country to visit a man at the other end and seek his real opinion upon any national question; railways will bring the products of our farmers' efforts to a speedy market; and, best of all, railways will lay unbreakable bonds of union across our States. We must, sooner or later, have railways—why not expend a small amount, now, for experiment?

From Maine to Florida, they laughed at him. His petitions to the New Jersey Legislature caused the veteran Solons therein to advise their incoming colleagues: "Look out for a rather short, grey-haired man, with a crazy idea he calls railroads—a damned fool named John Stevens." Public men of every rank and grade replied to his almost endless letters, only to say that they "did not know enough about steam to understand the plan," or that "Congress is shortly rising and would hesitate to consider new business this session." Among such doubters were Jefferson, Rufus King, John Jay, De Witt Clinton, and a score of others. While the Colonel explained, cajoled, and pleaded, even his own family were sceptics. Mrs. Stevens, writing to her son Richard, a surgeon in the navy, had this to tell him:

Your Papa is now at Harrisburg. He wants the legislature of Pennsylvania to let him build a Rail Road from Pittsburg to Harrisburg, but I tell him even if he gets the Act he will never get a subscriber.

And Richard's sister says, in a letter of her own:

Papa is busy with a new scheme he calls a Rail Road, which is to make us all heiresses!

New Jersey and Pennsylvania did, in fact, finally grant the charters. But it was years more before any companies could be incorporated with officers and directors of more than the most tepid interest, of any but the most curiously limited vision. George Stephenson's British *Rocket* of 1829 was a tested and proved affair before John Stevens's countrymen adopted an altered opinion of the picture he had given them of an America

covered with miles of steel; of trainloads of produce always on the move; of an army hurried to any frontier to meet an emergency; and of travellers passing, as he put it, "readily from New York to Philadelphia in two to three hours." Still, he has a railroad monument, for a good part of today's great Pennsylvania system was finally built under the very charters which he wrung from unwilling lawmakers. Happily, too, for himself, he did live until 1838, by which time men were fast becoming as railroad-mad as they had been steamboat-mad twenty-five years earlier. The "damned fool" and his teachings were finally accepted.

Such, in brief outline, was Colonel John Stevens of Hoboken. While he planted pomegranate trees and Chinese chrysanthemums in his garden, he planned a new steam engine; while he entertained his friends at a *fête champêtre*, he made them examine his newest experiment. The greater part of his life was given to three objects—the creation of these United States, the founding of their commercial prosperity, and their defense against all possible enemies. To his sons and grandsons he left it to complete works which cannot here be included. Chapter by chapter, or in its entirety, his was no mean record.

ARCHIBALD DOUGLAS TURNBULL.

MY KINGDOM FOR A CAYUSE

BY BURGESS JOHNSON

IF a horse and a dog commend me I may retain my self-respect in the face of human rebuffs. It is true that a dog may be something of a sycophant, as Mrs. Mary Austin asserts; ever since he deserted the wild pack and chose man's company. But a horse! The trouble is to find one. I do not mean a livery horse, for he must have lost in some degree his sense of discrimination. The compliment must come from a horse that has time enough on his hoofs to look me over and measure my qualities.

As a boy I was granted several opportunities to get to know horses whose sensibilities had not been dulled. That was a good many years ago, in old Mexico, and some of those horses were merely passing acquaintances; yet it seems to me that I remember their personalities quite as well as I recall many humans of the same period whose companionship may have lasted a bit longer. Two or three of them, moreover, belong in that miscellaneous company of God's creatures which have been willing to become my friends. Recollections of boyhood rides through sagebrush and mesquite are fragmentary; a mosaic of tiny pieces that can be of small interest to others, though the whole picture has rare charm for me. I mention it to make you understand, if I may, how greatly I desired my children to learn what it means to have the companionship of horses. So together we have sought them, my family and I, in different parts of the country, as finances and conflicting duties permitted.

There are plenty of horses in the East. But the day's control of a rented horse that was ridden by someone else yesterday and will have still another rider tomorrow does not make for mutual understanding, or a good mount. If you and a horse would get to know each other, you must have the care of him; that means a stable, and a programme that is difficult for a college professor, for reasons I need not discuss. But a ride of several days' duration