

[From the National Gazette.]

A Philadelphia friend who at the beginning of last week travelled the Baltimore and Ohio Rail Road, has handed to us the following communication:

The journey on the Railroad from Baltimore to the Point of Rocks, as far as which it has been completed, is one of the most exhilarating excursions both for the mind and body which can be imagined. While the velocity with which the cars are whirled, the ease of their motion, the exemption from dust, and the perfect safety of the conveyance, keep the animal spirits in a state of delightful excitement, the wondrous evidence afforded by the invention of the power of the human intellect, in almost annihilating the two greatest enemies to its advancement;—time and space,—gives food for reflection of the most animating and gratulatory kind. It is when taking the ride that one might especially be excused for yielding modern superiority, and calling upon the Greeks and Romans to yield their claims to the palm; for surely no monument of ancient improvement and grandeur can be compared with it either as to utility or impressive effect. If I were writing an essay on the durability of the union of these states, I should point to the Railroad as presenting one of the surest means and guarantees of that all important object; and I cannot help regarding this invention, as well as the discovery of steam, by which the evils of so vast an extent of country are neutralized, and its different portions brought as near together in reality, as the eye is in appearance with the object which it beholds through a telescope, as proofs that we are destined to remain united in spite of every threatening subject of severance.

The distance from Baltimore to the Point of Rocks is about seventy miles, and is accomplished in six or seven hours. The country through which the road runs is generally interesting, the cars are comfortable, the horses fine, and the company always in good spirits—no less volens, we might almost say.

The benefits which must accrue from the Railroad to Baltimore I would not venture to predict:—the sun-set of life has not given me that "mystical lore" by which

Coming events cast their shadows before;

but whatever good our sister city may derive, I have no hesitation in saying that it will not be greater than the industry, the activity, the intelligence and the hospitality of her citizens deserve. M.

[From the Philadelphia edition of Wood's Treatise on Railroads.—Continuation of Chap. X.]

2nd. Practicability of constructing Railroads and Canals.

1st. Railroads can be made in every situation where they may be required; physical obstacles may increase the expense of construction, or diminish the capability of the road when made, but no difficulties will ever be insurmountable when the wants of commerce demand a Railroad. Mountains can be scaled, the steepest precipices climbed, the deepest valleys and wildest streams, and most treacherous and fathomless morasses passed, by a Railroad. Want of water—great inequalities of surface, or change in the elevation, porous or cavernous soil, or marshes, and other difficulties—often would render Canals impracticable in situations where they might otherwise be useful.

Railroads can be constructed at a comparatively small expense in hilly countries; sometimes at a cost not greater than if the route were perfectly level; and, when the trade is chiefly in one direction and descending, (which is generally the case in the U. States,) such Railroads are superior to those which are level, inasmuch as greater loads can be drawn on them by a given power. The Railroads in Schuylkill county have cost much less than the locks, alone, would have cost on the Canals, which it was formerly proposed to adopt on several of their routes.—Railroads can be made (either the main line or branches therefrom) to every town, mill, factory, furnace, mine, quarry, or other establishment which may require accommodation. Such branch lines may be constructed of cheaper materials, and with greater changes in their graduation and curvatures than the main Railroad, and still be very serviceable. Canals, on the contrary, will require almost the same expense for branch and for main lines; and, if the difference in elevation between the main line and the place to be accommodated be considerable, or if other difficulties, previously adverted to, exist—such branch lines will be very frequently utterly impracticable, and, when practicable, will be generally expensive. In such cases, Canals are often compelled to borrow the aid of their rivals; and, hence, branch Railroads are often used as auxilia-

ries to Canals. The expense, injury, and inconvenience of transshipment, (which attends their use in these cases,) render them less advantageous than when they form branches to a Railroad. Establishments may be advantageously supported by means of Railroads, which Canals would never have created. Mill sites which would have been unoccupied, mines whose treasures would have never seen the light of day, quarries whose masses would have remained unwrought, and minerals which would have been valueless, may acquire importance by the aid of Railroads, which Canals could never confer.

Certainty of Transportation on Railroads and Canals.

In this respect Railroads are unrivalled by any means which the ingenuity of man has contrived—they are serviceable at all seasons—the drought of summer, and the frost of winter, materially detract from the utility of Canals; whilst their constant liability to accidents, and the difficulty, tediousness and uncertainty attending their repairs, diminishes the limited period in which they would be employed. The greater exemption from injury, (at least of that species which interrupts transportation,) which characterize Railroads, has already been mentioned, and the causes of it explained. The observation may be made, that no interruption, even of a single day, has occurred on any of the double track Railroads since their first introduction into the United States. On the Mauch Chunk Railroad, (which is a single line, hastily constructed, and the materials and plan not calculated for duration,) interruption has occurred but five days, from its commencement in 1827 to the present time. Other roads have been even more fortunate. Of some Canals in the United States, the remark may be made, rather that they have been occasionally navigable, and not that they have been occasionally interrupted by accidents. The New York Canals are free from ice only two hundred and twenty days on an average in each year.—In Pennsylvania the streams of the country are free from ice about 240 or 250 days in each year. The canals are impeded by ice sooner than flowing streams. For several years, commencing with 1820, the winters were unusually mild; hence, the actual period when the Pennsylvania canals (the majority of which have been constructed since that year) have been free from ice, ought not to be taken as a fair average, although the advocates of canals have been pleased to rely on it. Some of our canals are situated among the mountains, and in districts much elevated above the level of the ocean; consequently they are frozen for a longer time than those near the tide water.

The above period of 250 days will be lessened by drought in summer, and by leaks, breaches, and other accidents. Great interruption is often occasioned by the frequent freshets of our rivers, which, rising in their might, shake off the trammels which the puny efforts of man have attempted to prescribe for their governance: vast masses of ice, huge trees, and the wrecks of bridges, dams, and other structures, are borne away by a resistless force, and hurled with tremendous force against the dams and banks of the Canals which they encounter in their progress. Some of the dams of the Pennsylvania Canal are injured, or prostrated, almost every year. During the last year, the navigation of the whole western division was suspended for the summer and autumn by accidents; and the State Canals have, from these causes, been navigable only for a few months in each year. During the present year, already have three great dams, which are essential to the supply of the leading Canals of Pennsylvania, been swept with the besom of destruction. This havoc will be of frequent occurrence, and the whole commerce of the interior will be suspended, sometimes for several months. Whilst the Editor is writing, the newspaper of the day informs him that a dam on the Schuylkill has just been swept away by the flood! This navigation is the *carotid artery* of the State. The rupture of the other vessels, which are more remote, is, therefore of minor importance—a consolation which is offered to the acceptance of the friends of the Canal System in this their time of tribulation.

The repairs of the damages on the Pennsylvania canals, which the recent freshets have occasioned, will require many months, and the expenditure of at least \$200,000.

The opponents of Railroads have alleged that they are peculiarly liable to injury—that the rails might easily be broken or displaced by persons maddened. If this should be done, the wagons could be drawn for a short distance on the natural surface of the ground to the part of the

Railway which might remain uninjured. The injury could be speedily repaired, and the travelling would be either uninterrupted or slightly impeded. No injury would be sustained by the embankments; for it would require as much labor and time to destroy them as was expended in their construction. Every work of man may be injured by violence.—Our dwellings, our bridges, our ships, may become the prey of the incendiary; all our property is at the mercy of the desperate and malignant. But does this contingent evil ever induce mankind to forego the certain benefit which results from the use of such prosperity? Such contingent evil is not, however, peculiar to Railroads—canals are much more liable to injury—to injury easily inflicted—susceptible of concealment, and most disastrous in its effects, requiring much time and expenditure to repair. An embankment may be perforated by a stick in a few seconds; the water, at first oozing out almost imperceptibly, would soon enlarge the aperture; and the rushing and uncontrollable torrent would sweep away the most stupendous embankments, and strew their ruins over the desolated fields below them. Many miles of the canal would thus be rendered unnavigable. The injury inflicted on a Railroad is confined to the spot where the outrage is perpetrated. Canals have been injured, in the manner just mentioned, in the United States; and the Editor has seen the damage which, on one or two occasions, has been sustained.

The use of Canals is, from all these various causes, not only limited, but also very uncertain: fleets of boats are frequently detained without a moment's warning; sometimes for weeks, and even months; sometimes, also, they are suddenly frozen up. The present winter has afforded a striking illustration of the defects of Canals. The transition from autumn to a most severe winter was effected in a few hours; hundreds of boats were suddenly frozen up, and thousands, and tens of thousands of tons of coal, produce and merchandize, could not be taken to their places of destination. The cities of Philadelphia and New York were destitute of their supply of fuel; the most serious inconvenience, and even intense suffering among the poor, was the result; several persons perished in consequence of the cold; whilst a raging epidemic spread misery and death in a greater proportion among the destitute.—The price of fuel rose 100, and even 200, per cent. The whole commerce of the country was paralyzed. If Railroads had been adopted in lieu of the existing Canals, transportation could have been effected without any interruption. The city of Baltimore was abundantly supplied, every day, by means of her Railroads: fuel was sold at the usual price. The saving in this single article has been sufficient to render the value of these roads more generally appreciated. During the previous winter a deep snow covered the country—the Canals, as usual, were sealed with ice, and even the great highways of the country were for some days impassable. The snow drifts were heaped up in the excavations of the Railroads to a height of many feet, but the application of the snow-plough removed every impediment from the rails, and the intercourse continued without interruption.

The great rivers of our country, by means of which most of the interior commerce of our citizens is conveyed, usually rise, and are in good condition for navigation very early in the spring, or in the early and latter part of the winter: they rise and fall rapidly at all seasons: the Canals which connect them are often necessarily of great length, and trameled by numerous locks. The cargo of a boat, if sent from Philadelphia to Pittsburg by the Pennsylvania Canal, (even if the latter were navigable as early in the season as the great rivers of the west—a circumstance scarcely ever to be expected,) could not reach its place of destination in less than ten days, even if it proceeded day and night—and the time would probably be longer. In the meantime the rivers might subside, and their navigation be impeded. The Susquehanna, at Middletown, is swarming with vessels which descend that river during the freshets, and are detained for days at the locks of the Union Canal before they can enter it in their regular turn. Again, at the opening of many canals, in the spring, the sudden deluge of trade creates a glut in the market—a depreciation in the price of produce, which is extremely injurious to the proprietors; at other seasons there is a scarcity equally injurious to the merchant and to the consumer. Both results are prejudicial; they derange all calculations, interfere with the regular course of industry, and render trade a lottery. Regularity, not less than certainty, constitutes the soul of commerce. In these de-