

To-day there are over 375,000 miles of ceasing benefit to his fellow-man. railways intercrossing the earth. In the The railway antedates the invention of miles of tracks, more than enough to gir- tory of the one is contemporaneous with dle the globe fourteen times with single the other. Wooden railways upon which rails, while the combined railway systems | coal was drawn from the mines by horses of the world would be sufficient to open a were in use at an early day in Northumtrunk line between the earth and the berland and at Wylam, where Stephenmoon, with over 135,000 miles to spare son's father worked, the first locomotive



Pennsylvania ranking next with over 9,000. New York State has nearly 8,000. The District of Columbia closes the list with thirty miles.

The first rail of the Stockton and Darlington road was laid May 23, 1822, and it required three years and four months to complete twenty-one miles of single track. In 1887 the Manitoba system was extended through Dakota, a distance of 545 miles, between April 2 and Oct. 19-a few days over half a year. From the rude beginning in England less than three-quarthe commerce of the world-that has revolutionized the world itself, annihilated space and made subservient to the will of man. There are to-day over \$30,000,000,-000 invested in the railroads of the world, one-tents of the total wealth of civilized nations. More than 2,000,000 men are employed in constructing, equipping and operating the railways of the United States. The standing armies and navies of the world approximate in round numbers 3,500,000 men-the wealth destroy-How much more powerful is the ers. wealth-producing army of American workingmen who have changed the whole basis of civilization from the military to the industrial! When one studies the evolution of the railway he is lost in wonderment at the giant strides that have been made during a period so comparatively short. In the early stages of its development it met This plan was generally adopted and the with the strongest opposition, in many in- roads became known as "Outram" roads, stances force being employed to prevent and subsequently, being abbreviated, its progress. The stockholders of the formed the words "tram roads" or "tramcanal systems and the stage coach lines, wavs. and even certain classes of workingmen under the mistaken idea that the extendemand for manual labor, united their drawing coal out of the mines a short disforces and fought their imaginary common enemy. Parliament took part in the had at this time proposed utilizing them proceedings, and the promoters of the in- for general traffic purposes. While the itial lines were subjected to the most scru- rude railways and tramways were being first road was opened a great concourse and while a few were there to rejoice majority of the spectators were anticipating the pleasure of seeing the "bubble burst." many years, and was only dissipated when it had been demonstrated beyond dispute that the commercial interests of the country were advancing to a state that had never been attained before the introduction of the new traffic system. On this small stretch of track between Stockton and Darlington the great railways of the world had their beginning. But even this small beginning was a long time in coming. It seems strange to us now at the present day, with the wonderful development of steam and electricity brought so vividly before us, and made a gine proposed. On several other occasions part of our daily lives, that men within a period remembered by persons now living should be so blind to the advancement of public and private interests as to actually raise and organize an opposition to a system that has proved a greater benefit to the nations of the earth than all the other projects of civilization combined. To-day we are familiar with the names of great railway kings-men who have operated millions, who have been the life or the death of the stock market by the rise or the fall of a finger. We look with some thing of veneration at the careers of John W. Garrett and Thomas A. Scott. and even with a mixture of admiration at the wealth producing powers and executive abilities of Cornelius Vanderbilt and Jay

railway in the world was opened to he saw his train rushing on toward Liver- tion, conceived the idea of utilizing steam After one unsuccessful attempt in parliathe public for general traffic. The pool he nurtured the idea of a grand in the propulsion of carriages, but the Stockton and Darlington line of England | traffic way, and when he died it was with | roads in Scotland were in such bad condibegan operations Sept. 27, 1825, with the peace of soul of a man whose life has about twenty-one miles of single track. been one of enduring usefulness, of un-

for branch lines and sidetracks. The total was put in operation between the coal pit mileage of the United States is nearly and the loading quay. In 1791 Saintequal to that of all the other countries Fond, a French traveler, spoke in high put together. Illinois, with over 10,000 terms of the colliery wagonways in Engmiles of tracks, leads all the other States, land, which greatly facilitated the work of the horses, and he strongly urged upon

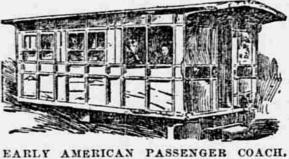
his own countrymen the economy with which coal was thus hauled to the shipping places as an inducement to them to adopt a similar mode of transit. Wagon roads of the same character were laid in the colliery districts of Scotland at a comparatively early period. During the Scotch rebellion in 1745 there was a railway between the Tranent coal pits and the small harbor of Cockinzie in East Lothian. These wooden tracks were the germ of the modern railway. With the advanced ideas

concealment in a wood.

## Origin of Tramways.

T is seventy-two years since the first | ly "Blucher" locomotive to the day when | ton, one of the inventors of steam naviga- | ance never entered into his calculations. tion that he got no further than to construct a model.

The first model of a steam carriage in | in the act they provide for the making England was made in 1784 by William | and maintaining of the tramroads for the United States alone there are 180,955 the practical locomotive, although the his- Murdock, the assistant and friend of passage upon them "of wagons and other Watt. Murdock succeeded in making an carriages, with men and horses or otherengine about a foot high that generated wise." The public were to be free "to use enough steam by the aid of a spirit lamp with horses, cattle and carriages" the to rush along at quite a rate of speed over | roads formed by the company on payment a walk a mile in length. One dark night of the authorized rates between certain



pointed engineer of the line, conducted a the pastor saw the little machine coming personal survey of every foot of the route snorting up the path, and, taking it for and began active preparations for buildthe "evil one," sprang into the hedges on ing the road. the side with shrieks of terror.

## **Richard Trevethick's Success.**

About the years 1800 and 1802 the quesof the workmen improvements gradually tion of building railways for stage coaches came and in some collieries thin plates of | was discussed and it was further proposed iron were nailed upon the upper surface that stationary engines might be placed of the wooden rails to afford protection at certain distances apart and by means from friction. It is probable that the first of circulating chains greatly lessen the iron rails were laid at Whitehaven in employment of horses. While these plans largely in doubt. He preferred to quietly 1738. Twenty-nine years later five or six were being considered Richard Treve- impress upon the stockholders the wistons of rails were cast for the Coalbrook- thick, a pupil of William Murdock, built dom of adopting a method he was confidale Iron Works in Shropshire, and in a steam carriage for use on the common 1776 cast iron rails nailed to wooden sleep- highway. He took out his patent March ers were laid at the Duke of Norfolk's 24, 1802. The carriage had the appearcolliery near Sheffield. The laboring peo- ance of an ordinary stage coach. The ple of the district were so incensed at horizontal cylinder, the boiler and the what they imagined was a trespassing on furnace box were placed in the rear of their rights that they tore up the road, the hind axle, and to the credit of the in- power. burned the coal piles and doubtless would ventor it may be said that this was the

have seriously injured John Carr, who first successful high pressure engine conconstructed the line, had he not sought structed on the principle of moving a pis- great success. The rails were of malleton by the elasticity of steam against the pressure only of the atmosphere. In ad- feet eight and one half inches. The first

William Jessop laid a line at Loughbor- dition to being well constructed, Treve- engine, the Active, that was put on the ough, in Leicestershire, in 1789, using the thick's steam carriage possessed the qual- line, was constructed by George Stephen-

FOR LITTLE FOLKS.

## A COLUMII OF PARTICULAR IN-TEREST TO THEM.

Something that Will Interest the Juvenile Members of Every Household -Quaint Actions and Bright Sayings of Many Cute and Cunning Children.

Four Bedtimes. "Cluck, cluck, cluck," said the hen. 'Tis time this little chick went to bed, Or you'll live to be a fowl Which in the night will prowl And be taken for an owl," she said. Then without a single peep The chick went off to sleep. Soft tucked up in its warm feather bed.

"Purr, purr, purr," said the cat, "'Tis time this little kit was in bed, Or you'll grow up to be a cat That cannot catch a rat-And you wouldn't much like that," she said.

Then the kitten in a trice hours. It is clearly obvious from this that Slept, and dreamed of catching mice, the projectors of the line had no clear Wrapped in fur in her basket bed. conception as to the scope and operations

> "Bow-wow-wow," said the dog, "'Tis time this little puppy went to bed, For playing in the dark Will take away your bark And you'll never make your mark," she said.

Then the puppy stopped his play, And went to bed straightway, Curled up on his clean straw bed.

"Come, come, come," said mamma, "'Tis time this little boy went to bed, To sleep through the night, And with the morning light To awaken fresh and bright," she said. But the boy did tease and tease-"Let me sit up this once, please," And at last was carried pouting off to bed. -Farm, Field and Fireside.

How Indians Poisoned Their Arrows. On the deserts of Arizona are to be found the most venomous, the largest, most active and the most dangerous rattlesnakes in the world. Six feet is After visiting Stephenson's locomotive at an ordinary length for these reptiles. Killingworth Pease and another stock-Recovery from their venom is exceedholder became convinced that it was the ingly rare. In August they become proper system, and in 1823 an amended large, yellow, bloated things, and it is at this time of the year that the Apache Indians seek them to obtain poison for their arrows. A deer's liver, smoking hot, is torn out and laid before the reptile. He is punched and angered so able and cast iron and the gauge was four that he strikes it again and again, the morsel turning a blue black from the poison even before the snake has finson. It weighed about eight tons, and ished striking. This delightful morsel is then placed high on a pole to rot and decompose in the sun, after which it is brought down and the arrows stuck into it, they being afterward dried in the sun to retain the poison-a most horriole custom among the worst Indians on the continent.

quick gallop. When she reached the sea she urged her horse into the angry surf. She rode boldly on till she reached the vessel. With much difficulty she took some of the children in her arms and put them before her on the saddle, then took women and larger children. So she went backward and forward four hours till all were safe on land, the servant having ridden in to bring out the last man.

Tired and wet as the girl was, she still had something more to do. Those forty-eight people must have food and protection before night came on. So Grace rode for help, but by the time she had gone the eight miles, she was so worn out that she fainted, and it was some time before she could tell what had happened. Her married sister started off at once with food and wraps for the shipwrecked people, and the next day they were all taken to Mr. Bussell's home.

Don't you think she deserved the medal?

## For Stormy Saturdays.

I have found the following game an admirable one for a stormy Saturday: The one who is "it"-and nothing pleases the little ones more than for mamma to be the "it"-thinks of the name of some object, beast, bird or thing, then says, "Here am I." Children-Where did you come from? "I came from the country" (or city, or house, as the case might be). Children-What have you in your trunk?

"Something that begins with the letter H" (or any other letter that suits the case).

Children-Describe it. "It has feathers, two eyes and two legs."

Children-Some kind of a bird. "What kind of a bird?" Children-A bluebird. "No; a bluebird does not begin with

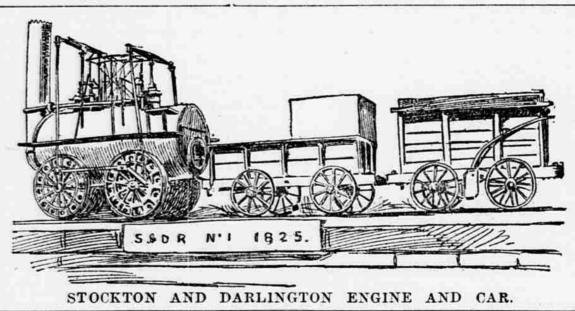
Children-Can it fly very high? "No; it cannot. In fact, although belonging to the bird kingdom, it is not what you would call a bird." A child-Oh, I know; a hen. The successful guesser then becomes the "it."

Mamma will find that this game not only sharpens the wits of the children, but her own as well, for many will be the questions these bright little creatures will ask. Much information will thus be imparted.

Finding the Fip (we use a nickel). The nickel is placed in plain sight and the

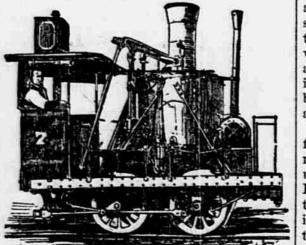
cast iron edge rail, with flanges upon the ity of moving quite rapidly along the tires of the wagon wheels to keep them | roadway.

from slipping off the tracks. In 1800 Ben- There were many inventors after Treveters of a century ago has grown a stu- jamin Outram substituted stone props for thick who sought a motive power to superpenduous system that has revolutionized timber to support the ends of the rails. sede horses, and while some produced very



meritorious works none met the tests required of them. There were Blenkinsop of Leeds, who had an engine with toothed wheels that ran upon a cogged rail; Chapman of Newcastle, who employed a sys-

tem of chains, and Brunton of Derby-In this way the early railways were slowly improved. As yet they were mere shire, who invented a "mechanical travsion of railroads means a decrease in the toys. Their usefulness was limited to eler" to go upon legs, working alternately like those of a horse. These and simtance to the place of shipment. No one ilar contrivances projected about the same time show that invention was actively at work and that many minds were trying to solve the traction problem. Blackett, a tinizing cross-examinations. When the formed in the mining regions the inventive colliery owner of Wylam, whose tramway genius of man was busily engaged in the | ran by the house where George Stephenof people assembled to witness the event, solution of a new mode of locomotion. son was born, was one of the most persist-Thus far the improvements had been al- ent of capitalists in his endeavors to obif the undertaking proved successful, the most entirely confined to the roads, and tain a locomotive to haul his coal wagons. He had tried several of the unthe wagons were still drawn by horses. wieldy inventions of the day and was be-The first person who seems to have con-This opposition continued for ceived the idea of employing steam to coming the laughing stock of his acquaintmove vehicles on land as well as ships at ances, who regarded him as a monomaniac sea was Solomon De Caus, who was lock- on the subject of steam motive power. ed up at Paris as a madman in 1641. He While Blackett was experimenting at wrote a book on the subject, portions of Wylam George Stephenson was racking ed as absolutely dangerous, this new rate which were embodied in the work by the his brains to the same end at Killing- of speed must have been looked upon as Marquis of Worcester entitled "Century worth, where he had been appointed enof Inventions." Savery, a Cornish miner, proposed a method of propelling carriages paved the way for Stephenson. Profiting by the failures of the locomotives of the tries. along ordinary roads, but took no practical methods to carry out his views. In past, Stephenson planned and constructed 1759 the subject was presented to James | his first locomotive in 1814, naming it My Watt, who in the specification of his pat- Lord, after Lord Ravenswood, the prinent of 1769 gave a description of the en- cipal owner of the Killingworth colliery, who advanced the money. This locomotive, which was afterward known as the the question of applying steam as a motive



was capable of drawing about forty tons, in insignificant contrast with the American "consolidation" locamotive of to-day, weighing fifty tons and able to haul on a

dead level over 24,000 tons, while more powerful engines are still being designed. No sooner did the coal and merchandise trains begin to run than new business relations sprang up between Stockton and Darlington, and the increase in freight traffic called into existence a new passenger transportation. Before his plant was put in operation an attempt had been made to run a stage coach between Stockton, Darlington and Barnard Castle three times a week, but owing to the want of support it was discontinued. However, after the railway began running the stages were again put on and did a thriving business. The railway company, recognizing the importance of this branch of service, started the first passenger coach. the Experiment, Oct. 10, 1825, a fortnight after the opening of the line. It was drawn by one horse and performed the journey daily each way between Stockton and Darlington, accomplishing the distance of twelve miles in about two hours. The fare was a shilling and each passenger was allowed fourteen pounds of luggage free. The Experiment was not operated by the railway company, but was let to Pickersgill and Harland, who paid tolls for the use of the line. This first passenger coach was regarded as a wonderful conveyance at the time, but it would cut a rather poor figure if placed beside the modern drawing-car palaces constructed at a cost of \$20,000 or over. Stephenson next constructed and equipped with his locomotive the Liverpool and Manchester Railway, which was opened

ment the Stockton and Darlington rail-

way act was finally passed April 19, 1821.

The projectors did not originally contem-

plate the employment of locomotives, for

Some time elapsed after the passage of

the act for the construction of the railway

before any steps were taken to carry it

into effect. Toward the close of 1821

Stephenson called on Pease and strongly

urged the adoption of the locomotive on

the new road. The inventor made so good

an impression that he was soon after ap-

Estimate of the Cost.

he set down £6,200 for stationary engines,

not even mentioning locomotives. His

reasons for this will be apparent when it

is known that the whole question of steam

locomotive power was in those days,

among practical and scientific men alike,

dent would prove a complete success.

act was passed permitting the use of this

Two years later the road was opened

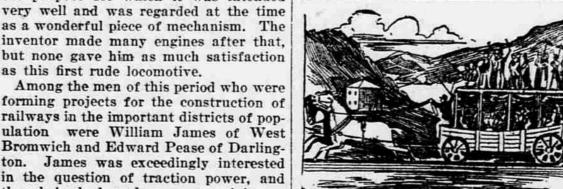
to the public, and from the start proved a

In making his first estimate of the cost

of their railroad.

Sept. 15, 1830. Passengers were carried the entire distance of thirty miles in a little over an hour. Inasmuch as it had been previously considered a great feat for the locomotives on the Stockton and Darlington road to beat the stage coaches, and twelve miles an hour had been regardsomething phenomenal. The growth of gine-wright of the collieries. Blackett the railway from this date was rapid, companies being formed in all civilized coun-

> America quickly adopted the railway system. As early as 1827 a crude line was opened between Boston and Quincy for the purpose of importing granite for the Bunker Hill monument. In August, 1829, the Carbondale railroad was opened by the Delaware and Hudson Canal Company and extended from Honesdale, Pa., to Carbondale, a distance of about six-



though he had made no personal inventions he performed as great a service to B. & O. RAILROAD, 1850-55. the public when he found and appreciated teen miles. It was the first road on which George Stephenson. As early as 1803 a locomotive was used in this country. The engine was built in England, under the direction of Horatio Allen, who enjoyed the distinction of being the first to run a locomotive in America. It was called the Stourbridge Lion and arrived at its destination Aug. 9, 1829. First Baltimore & Ohio Road. In May, 1830, the first division of the Baltimore and Ohio Railway, extending from Baltimore to Ellicott's Mills, a distance of fifteen miles, was formally opened, but the passenger service was not inaugurated till July 5 of the same year, owing to the scarcity of cars. Horse power was employed until the road was completed to Frederick, in 1832.

Odd Industry for Boys and Girls. Boys and girls of Brussels, Belgium, have been having a lesson in the value of small things. The children attending the public schools of the city were requested by their teachers to gather up, on their way to and from the school, all such apparently valueless objects as old metallic bottle capsules, tinfoil, tin cans, paint tubes, refuse metals and other things, and deliver their collections daily to their teachers.

In the period from Jan. 1 to Oct. 1, 1895, or within eight months, the following amounts were collected: Tinfoil, 925 pounds; old paint tubes, 220 pounds; bottle capsules, 4,415 pounds; scraps of metal, 1,221 pounds; total, 7.871 pounds. This apparent rubbish was sold and the proceeds applied so as to clothe completely 500 poor children and send ninety sick ones to the country, and there still remained quite a balance, which was distributed among the poor sick of the city.



Little Girl-You bad cat, where's my bird? Cat-Oh, he's just gone inside.-Life.

A Brave Girl. A girl of sixteen has had the gold medal of the Royal Humane Society presented to her for her brave action in rescuing nearly fifty people from death. Her name is Grace Bussell and her father was one of the first settlers near the Swan river in western Australia. She used to help him in many ways, sometimes riding twenty miles a day with the cattle, and was as much at home in the saddle as she was in the kitchen.

finder is told he is "hot" if near, and "cold" if far from it. Once it was in the tumbler of water and eluded the searcher for some time. Another time it was in the middle of the floor. Powers of observation are developed in finding the nickel, and ingenuity in hiding it in sight and yet not too plain.

Queerest of Introductions. "Speaking of introductions," said the much-traveled man in the smoker, "reminds me of the queerest one I ever saw or ever heard of, and in which I was one of the principals. I was crossing from Nova Scotia to Boston on a schooner loaded with plaster, a chance that came to me in a country port where I was staying for my health. As the boat saved me sixty miles of stage coach riding to the town of Halifax, where the nearest steamer travel was to be found, I took passage and for ten days was tossed about on a sea voyage that by steamer consumes thir-

ty-six hours. "There was another passenger-a tourist like myself-and the captain made several desperate efforts to get us acquainted, he knowing us both, but at each attempt, before he could pronounce our names, he was either called on deck or the ship gave a lurch and the introduction did not take place.

"But one day, when it was so rough outside that we stayed in our bunks in the captain's cabin, and the wind was blowing great guns, the skipper, who had come below for something, stopped to say: 'You two gentlemen ought to be made acquainted. Mr. Smith, Mr. Brown; Mr. Brown, Mr. Smith.'

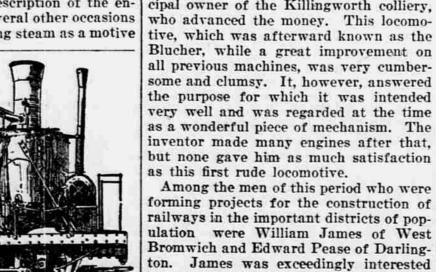
"That is the down-East method of introducing people, and as our names were mentioned we each turned in our bunks to salute the other, the bunks being on exactly opposite sides of the cabin.

"But at that moment each one of us shot from his bunk as if from the mouth of a cannon, and as we passed at that rate of speed we caught each other's hand and shook it with a will, and had just time to acknowledge the captain's politeness by saying as we flew past:

"'Glad to know you, Mr. Smith.' "'Delighted to meet you, Mr. Brown.' "-Chicago Times-Herald.

Has Twenty Dressmakers.

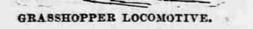
It is well known that the German Empress is an ideal housekeeper as well as an ideal wife and mother. Her dread of waste goes so far that the suits of her elder children are cut down to fit the younger boys and her own court dresses are altered again and again, so as not to be recognized when they are worn at any court functions. Yet it is also reported that an army of twelve dressmakers is always at work for the Empress and that it is increased to over thirty whenever the Empress is about to start on a journey. New gowns would, after all, be less expensive, since the great Berlin artist in dresses who makes the court costumes for her majesty charges only about \$75 for making a gown of state.



Gould. Dut greater, fat greater, man a	
Garrett, a Scott, a Vanderbilt or a Gould.	
was George Stephenson, the poor, unedu-	-
cated, colliery fireman, who worked out,	
between the long and cruel hours of man-	tio
ual drudgery and slavish toil, the problem	for
of the railway for the traffic of the world.	100
He saw a half century ahead of his time.	COI
the saw a nam concury anead of his time.	mo

Opposed by Capital. men and the learned engineers of the day he fought his way inch by inch, and by the sheer force and tenacity of his powerful mind brought to a successful completion a project that had been the compananxious years.

To George Stephenson and to him alone belongs the credit of the magic development of the railway. From the moment



wer on land was brought to his atten-James published an article in which he on, but he was too busily occupied perstated he contemplated the projection of cting his condensing engine to further a railway between Liverpool and Mannsider the locomotive. The first actual chester. He had many other railway odel of a steam carriage of which there propositions under way, but nothing came is a written account was made by a

of them, except to stimulate the demand Despite the opposition of the moneyed Frenchman named Cugnot, who placed it for better transportation facilities. on exhibition in 1763. Afterward he Edward Pease was a man of an entirely built an engine on the same plan, but different character. He was not so amwhen put in motion it projected itself bitious as James, and it seems he at first with such force as to knock down a wall only contemplated a horse tramroad bethat was in the way, and the machine was tween Stockton and Darlington, but as he proceeded with the project and after ion of his thoughts by day and a vision in set aside as a dangerous invention. It is his dreams by night for many long and still preserved as a memento of the early he had had an interview with Stephenson

efforts toward steam locomotion. In 1772 he became an earnest convert to the loco-Oliver Evans, an American, invented a motive system. What Pease first consteam carriage to travel on ordinary templated was the means of selling coal at roads, and obtained from the State of the stations along the line of the proposed when a boy he completed his first clay Maryland in 1787 exclusive right to make railway. He did not dream of the outlet model of a stationary engine; from the and operate it. But no practical use ever that would be afforded to other markets, time when the steam hissed in his ungain- came of the invention. William Syming- and such a thing as a passenger convey- takes.

No man has to serve an apprenticeship in order to learn how to make mit-

Now it happened one day in Decemher that a vessel was wrecked off the coast, about eight miles from the Bussells' home. The steamboat sprang a leak, and not being far from land, the captain tried to steer her in. But she ran aground, and there she stayed, with the water gradually flowing into her. The lifeboat which was on board the steamer was lowered, but it leaked, and eight people who ventured in it were drowned. The surf ran so wildly that no one dared to swim through it, and there was not a house or a person in sight.

The girl of sixteen was riding along with a native servant. She caught sight of the vessel, and turning her horse's head towards the coast, started at a they work.

**Kissing Unwilling Girls Legal.** Holland's court of appeals once decided in a case of assault by a young man who kissed an unwilling girl in a street of Utrecht that "to kiss a person cannot be an offense, as it is in the nature of a warm mark of sympathy." and dismissed the case.

Theatrical people are peculiar. They, work when they play and play when