HAT SHALL THE PAVEMENT **REQUISITES OF BEST PAVEMENT-ITS** GREAT BENEFIT TO PROPERTY.

erty, establishes permanent grades, and makes possible improvements of permanent character. In the residence porshells of houses stood before. Trees passing on it. are planted and parks are made to the of the rectangular blocks soon wear off, curb lines. Properties are improved and making practically a corduroy road, and kept in repair until in some cases the after five or six years cease to be pave-cutire appearance of the street is ments. The wood block pavements of altered. Take, for example, any of the London and Paris are laid on heavy

the streets, but it builds up the city. The street maying of the city is in a The first cost of this pavement is The street paving of the city is in a

burden and a hardship, but another view shows that it brings advantages and possible without it.

best to pave it well.

setter put down a good pavement in the beginning than a cheaply con-structed pavement that won't last. The no two blocks can be said to wear alike. natoral tendency of a property-owner The edges round off, the blocks "broom" is to favor a pavement that will sot up, and the pavement becomes more or cost much. This is a short-sighted less rough within a few years. policy. A first-class pavement on an Brick is a pavement that varies in merit in various parts of the country. vestment, you've got the foundation In some of the middle states small comthere for repaying at little cost.

a first-class street. A cheap pavement streets or for streets where there is no makes a cheap street. If you want your teaming and no great amount of traffic. property improved, get the best im-provement. You'll get your money back generally those where brick manufacmany times over.

The best pavement is that which best possesses the following advantages: Durability and low cost of main-

tenance Eease of thorough repair. Ease of traction. Noiselessness.

- Healthfulness.
- Economy in cleaning.
- Beauty.
- Low first cost.

Nothing means quite so much for your pocket, your pride, or your purpose the character of your street. Hence. keep in mind the advantages just named; study them over and you will find that they contain "all the law and all the gospel" of street paving.

Macadiam, Wood, Brick, Etc.

A macadam pavement is not as expensive as a hard-surface pavement. It is easier on horses' feet, makes a good driving road, and is peculiarly adapted dreds of thousands of dollars have been to park driveways and country roads, spent in exploiting the theories of coalbut it is not a good pavement for a residence street, because it will not stand this kind of pavement has been tried, traffic and is too expensive to keep in with the invariable result of loss to the repair. Besides, when the weather dry, it is dusty; when the weather is wet, it is muddy. Either condition is Osborn Baker, objectionable; when dry the dust is Improvements." own into the abutting homes, and there the stone grit is especially de- been used for road purposes in a comstructive to furniture; when wet the paratively small way in England for 20 or destructive tendency is turned toward 30 years past; and the experience of Ham- into use.

Paving is the salvation of any street. of the surface has disappeared, and the It enhances the value of abutting prop- blocks have worn bottle-shaped or worked out of place, it becomes the dirtiest, slipperlest, noisiest and most unsanitary kind of pavement." this condition, which takes place within tions of the city, where paving has been a few years after it is laid, the pavedone, greater changes for the better are ment is an eyesore, a mence to the always noticed. Property-owners are horse, and a terror to those who have stimulated to improve their places. New to live or do business on the street by residences spring up where worthless reason of the roar and clangor of traffic

altered. Take, for example, any of the paved streets in our city. Contrast the condition of the property along these streets with the condition before the streets with the condition before the paving was put in. "The change in al- tightly compressed together. They are most every case has been little less than laid to a very smooth surface, and as wonderful. Paving not only improves soon as the blocks show any signs of

large measure responsible for the great great, and repairs are constantly re-quired at heavy expense. They are freresidence improvement made in the city quently sprinkled with grave) to lessen in the past several years. There should slipperiness, and with water for cleansbe no hesitancy on the part of the prop- ing purposes. The result is that the erty-owners in joining the ranks of the pavement is seldom or never dry, and alpetitioners for the improvement along ways slippery and dirty. A creosoted their street. The cost of the improve- block pavement is objectionable because ment is many times looked upon as a of its slipperiness and its slckening odor, and as it becomes older it becomes noisier and roars. Wood blocks are, the first place, unsanitary, and in the changes of value to the property, not second place unequal to heavy traffic. Where wood pavements have existed for If it pays to pave a street, it pays a few years any one may, by removing a block, find on the bottom a settlement Better put down a good pavement in of putrid matter, the nests of disease

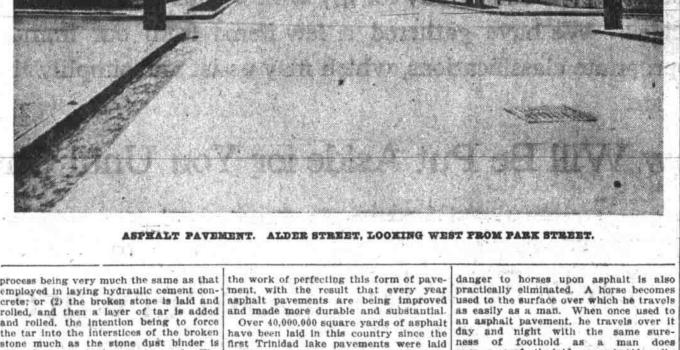
munities use it exclusively, and in many Besider, a first-class pavement makes of the cities it is preferred for side tories are numerous and where the brick can be laid cheaply. When, however, it comes to the large cities, where street traffic is heavy, and where concrete foundations are insisted upon, brick has little or no standing as a pavement against asphalt or granite. No two burnings of brick are alike, and the bricks vary in density and fiber; and no "binder" has been discovered 'filler'' or that would keep out moisture and filth, and prevent the edges from chipping. Then there is trouble in providing for asphalt macadam. expansion; the sun's rays expand the brick and push out the curbing, or lifts the pavement from its bed; and this creates an air chamber below the pavement that causes an aggravating roaring.

similar to that caused by the passage of a wagon over a bridge. Even as a sidewalk brick has almost entirely given way to cement. For the past 50 years experiments have streets. been made with coal tar as a paving ma-

"The perfect pavement-that is, a paveterial, but never with any success. Hunment that will not wear out, that is smooth without ever becoming slippery. tar advocates and every possible form of that is never uneven, that gives off no noise, and that is not expensive-has not yet been developed. It is generally agreed, is property-owners and the discrediting of however, that when such a pavement is coal tar as a paving cement. Prof. Ira perfected it will be along the lines of the Osborn Baker, in his book, "Roads and sheet asphalt pavement (called "sheet" " says: because of its surface) "Broken stone with a tar, binder has

Asphalt pavements in this country have been in existence for less than 30 years-in fact, since the telephone came There has been a constant

Asphalt Pavements.



colled, and then a layer of tar is added and rolled, the intention being to force the tar into the interstices of the broken stone much as the stone dust binder is worked into a broken stone road. The under government auspices in Washingproduct in the first case could appropriton, D. C., in 1876, and in every city where, ately be called tar concrete, and in the asphalt pavements have been laid there second tar macadam; substantially the same as methods employed in making

against pavements of other materials. When properly laid and maintained. asphalt outwears any other pavement. "Obviously tar concrete and tar mac adam are suitable only for comparatively Broadway in New oYrk, the heavy traflight traffic roads, and are more approfic of which wore out two stone-block priately compared with ordinary brokenpavements in 16 years, was in 1900-1901 stone roads than with asphalt pavements. paved with asphalt; that Fifth avenue in It is hardly probable that tar macadam New York, which wore out as fine a gran will come into anything like general use ite pavement as had ever been laid, has either for country roads or for city

been paved in asphalt; and that Broad street in Philadelphia, Tremont street in Boston, Michigan boulevard in Chicago, Pennsylvania avenue in Washington, and the most important streets in Cincinnati, Cleveland, Omaha, Kansas City, New Orleans, Louisville, St. Louis, and in fact every large city in the country, have this form of pavement. These streets would never have been paved with asphalt had not asphalt been found to have the higher wearing power. The wearing power of asphalt is very great in itself, but it is

still further enhanced by the ease with which repairs are made.

As asphalt pavement such as is laid in America is practically an artificial sandeconomically cleaned. When washed, all greater the traffic the shorter lived will any pavement be; that a smooth pave-sewers. A city can be thus entirely freed from any danger of disease bred from the putrid matter held in the in-terstices of the best initiated navaments and comfort; that all of these available. terstices of the best jointed pavements, and comfort; that all of these are attri-In economy of cleaning asphalt holds butes to be desired in any pavement: the advantage. It has a clean, unbroken and that cracks in jointed pavements surface, over which power sweepers are the most vulnerable spots and reduce may be sent and all the filth and dust the durability while adding to the noise, gathered up. It can be cleaned in the daytime most economically by the polic- and it has been found that all payeing system. Under the system known ments laid upon durably concrete and as "White Wings," New York keeps its guaranteed, cost about the same, except-Asphalt Pavement in Portland.

asphalt pavement so that one can walk across the street at any point without incurring the least stain. This, too, at The asphalt pave The asphalt pavement on Morriso a cost much less than that upon any form of pointed pavement. In the averstreet from Front to Chapman, was put down over 16 years ago. This pavemen age city the cost of sprinkling alone will has been placed in good repair, the light almost take care of the cleaning of the rails of the City & Suburban railway almost take care of the cleaning of the street having been replaced with the heavy two or three times a day lightly, which grooved rails as far out as West Park is all that is necessary. street, and the change in tracks the re-

edged that an asphalt pavement adds more to the attractiveness of a street The asphalt pavements of a street than any other results of a street than any oth than any other pavement which is laid, years ago on Third and Main to Glisan and that, it is an attractiveness which street, and on Washington street as far continues. The color is pleasant to the west as Sixteenth street, have been eye, and it is such as to set off best the placed in excellent condition since the lawas and trees and houses with which City & Suburban and Portland Railway the street may be lined. In a business companies replaced their light rails with street asphalt adds to the architectural heavy grooved rails; while from Sixbeauty and general esthetic scheme teenth to the City park heavy tracks more than any other pavement. As-phalt streets have a direct influence ment, having a concrete foundation, with upon the people. Most men take pride vitrified brick gutters, making Washing-in keeping their homes neat and trim ton one of the finest streets, as it is one and having a lawn, but there are a great of the most used, in the city. many, who are content to allow their provement of this street is much appre-places rather to go backward than for. clated by all, as among other reasons it ward. It has been the actual experience is part of the route over which tourists of a great many cities where asphalt invariably travel. has been laid, that it has proved an in-A little over five years ago

centive to the general improvement of street was of comparatively little importance, but about that time it was As to the question of how steep a paved with asphalt from Front to Sixth, grade asphalt can be laid on, Professor and this portion of the street at once paved with asphalt from Front to Sixth, Ira O. Baker, professor of civil engin- began to assume more importance. This cering in the University of Illinois, says year it was further paved to Lownsdale that experience has shown that asphalt street, and henceforth will be a promincan be laid on a 5 or 6 per cent grade, ent business street.

as has been demonstrated in New York City. A number of citles have asphalt side, has also been asphalted during the pavements on a 7 per cent grade, among year and in consequence bids fair to them Peoria, Ill.; Grand Rapids, Mich.; rival Sixth as a business thoroughfare. Syracuse, N. Y.; Troy, N. Y.; Omaha, And so it is everywhere, whether in Neb., and St. Joseph, Mo. In Scranton, Pa., a short pavement is on a 13 per business or a residence district; a guaranteed asphalt pavement is the making of the street, and nothing else cent grade; in San Francisco on a 16 per cent grade; and in Pittsburg on a increases the value of abutting property so much.

Guarantees.

Previous to the introduction of asphalt pavements, the question of guarantees did not demand much attention. It was undoubtedly originally intended to indemnify the city from any loss on account of poor material, poor workmanship, action of heavy traffic, or deterioration of material for any reason what-At the present time it is known ever. about how long a good asphalt pave-ment will last, and it has been observed whenever the asphalt pavement has turned out badly that the defects were all shown inside the first three years of its life. A responsible contractor con-

structs his pavements of the same ma-terials, and with the same care and skill, whether guaranteed or not. The artificial stone curbs and sidewalks and five-year guarantee protects the city against the possibility of error, costs the contractor who performs honest work but little or nothing. pavement is turned over to the city at prices prevail: the end of five years in good condition, and will last many years more. Prop. foundation, \$2.47 per square yard.

erty owners should see that the city makes provision for the maintenance of pavements, whatever the material may Asphalt pavaments are generally more yard.

Vitrified brick pavament, exclusive of foundation, \$1.75 per square yard. Treated wood block pavement, exclusive of foundation, \$1.90 per square Asphalt, 112-inch binder, 2-inch surexpensive than brick as to first cost, but

to 16 feet.

According

and

not when the bricks are laid on a con- face, exclusive of foundation, \$1.69 per

While well adapted to business streets with a heavy traffic, asphalt is pecul-iarly suited to streets in the residence

districts; and if the system of parking

streets that obtains in castern cities

were adopted here, the asphalted road-

way might be narrowed so that the ex-

In eastern cities the sidewalks vary

in width from 5 to 9 feet, averaging a

little over 7 feet; the lawns from 4 to 11,

averaging 7.2 feet; and the roadway from 20 to 50 feet, averaging 35.5 feet;

and in streets without car tracks the

lawns are often wider, ranging from 7

Comparison of Cost.

concrete foundation will be the same, no

matter what pavement might be laid.

to

The awarded by the city, the following

The expense for grading, constructing

Stone block pavement, exclusive of

1

ewett

contracts recently

pense would be materially decreased.

He is not obliged to feel his way. is an especial advantage of asphalt when is an increased demand for them, as horses are highly checked and cannot see the surface over which they are traveling. The minute that such a horse strikes asphalt pavement he becomes sure

that his footing is to be the same every time he puts one of his feet down, and therefore travels more easily, with less restraint and no fear. An asphalt pavement during its entire

life is less noisy than any other pavement that can be laid. The only noise which comes from it is the click of the horses' shoes, and this in ordinary weather is less sharp than on any other hard surface pavement. - Even creosoted block, when it becomes rough, as it is bound to do in time, makes a pavement upon which not only the sound of the striking shoe heard, but in addition thereto the rattle of the vehicles as they pass over the rough surface.

Realthful and Beautiful. Asphalt is the most sanitary and

healthful pavement laid. Look to the many petitions of physicians to pave-

with asphalt about hospitals, and the evidence of the late Colonel Waring,

17 per cent grade. over a perfectly-laid cement sidewalk.

This

the paint and varnish of passing ve-the paint is less constant to use. There has been a constant there has been a constant there has been a constant there has been a gradual improvement, as there has been a gradual improvement, any man of this advantage of a sphalt, it therefore presents a grity sur-to a very steep grade of 10 per cent tion of the paving problem, and would less nearly to fill the voids, and then the the sewing machine. The highest-priced in passing ve-part of the paving problem, and would less nearly to fill the voids, and then the the sewing machine. The highest-priced in passing ve-the sewing machine. The highest-priced in passing ve-the paving problem, and would less nearly to fill the voids, and then the the sewing machine. The highest-priced is passing ve-phone, the telegraph, the automobile and the paving problem, and would less nearly to fill the voids, and then the the sewing machine. The highest-priced is passing ve-the paving problem, and would less nearly to fill the voids, and then the the sewing machine. The highest has been as gradual improvement to prove that the the paving problem. The highest prove that the the paving problem and would less nearly to fill the voids, and then the the paving problem and is not prove that the the paving problem. The highest priced is pave the paving problem and the paving problem and the paving problem and the paving problem and paving problem. The highest priced is pave the paving problem and pave the paving problem. The highest priced is pave the pave the pave the paving problem and pave the pave th last forever, but after the smoothness mixture is deposited and compacted, the talent has been and is now engaged in ble than upon any other surface. The cling, and it is easily, thoroughly and It needs no argument to prove that the in progressive cities.

