ure the length of the shore, and ascertain the portion thereof to which each riparian proprietor is entitled; next measure the length of the line of navigability, and give to each proprietor the same proportion of it that he is entitled to of the shore line; and then draw straight lines from the points of division so marked for each proprietor on the line of navigability to the extremities of his lines on the shore. Each proprietor will be entitled to the portion of the line of navigability thus apportioned to him, and also to the portion of the flats or land under the water within the lines so drawn from the extremities of his portion of the said line to the extremities of his part of the shore. The general rule of division, therefore, is, as the whole shore line is to the whole line of navigability, so is each one's share of the shore line to each one's share of the line of navigability. The lines so drawn will be parallel or diverge or converge as the navigable water line happens to be equal and parallel with, or is longer or shorter than, the shore line." 94 Va at pages 652, 653, 27 SE at page 494; see cases cited.

The map exhibits before the court show the lines of that portion of the river surrounding the subdivision reserved as a boat basin, and show lot 6 bordering on the basin. Clearly it was the intention of the proprietors of the subdivision to accord riparian rights to the owners of lots bordering on the river. In fact, the deed conveying lot 5 expressly so states.

We are of the opinion that the trial court erred in extending the dividing line between the lots beyond the low water mark indicated on the maps, and in failing to settle the issues submitted on the pleadings in accordance with the formula quoted above.

For these reasons the decree is reversed and the case remanded for further proceedings not inconsistent with the views here expressed.

Reversed and remanded.

ANNOTATION

Apportionment and division of area of river as between riparian tracts fronting on same bank, in absence of agreement or specification

[See ALR Digests, Boundaries §§ 15–17; Waters §§ 18–22, 44–48.]

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I. In general

§ 1. Scope and introduction.

Riparian land is land which lies along or borders upon a river; and, in general, any tract of land which has frontage on a river has appurtenant thereto an area of riparian rights extending from the bank or shore out into the waters or bed of the river, the outward extension of such riparian rights area usually being, on unnavigable rivers, to the thread or mid-line of the river, and on navigable rivers out to deep water fit for purposes of navigation.

A treatise states that briefly a riparian proprietor is one whose land is bounded or traversed by a natural stream, and riparian rights are those which such a proprietor has to the use of the stream or water. 56 Am Jur, Waters § 273. And another authority defines riparian rights as being "The rights of the owners of lands on the banks of watercourses, relating to the water, its use, ownership of soil under the stream, accretions, etc." Black's Law Dict.

The general question for examination in this annotation is: In the absence of agreement between the respective riparian landowners or some controlling specification in a deed, survey, or plat, how will the law apportion the appurtenant area of the river or river bed and draw the boundaries or division lines therein as between two or more separately owned tracts of riparian land lying along the same bank or side of the river?

It will be understood that the annotation is concerned with the rules and methods for projecting boundaries or divisional side lines out from the bank or shore to the thread of the river, or some intermediate terminus, both where the riparian proprietor is deemed to own title to the bed of the river and where he has simply riparian rights therein not including title to the submerged land.

The annotation relates to rivers and river bed areas, and does not deal with the apportionment and division of water frontage areas in lakes or oceans.[1]

An important Florida case involving tracts fronting on an ocean bay has been treated in this annotation because of its instructive discussion of the problem and because its doctrine, apparently, would control in that jurisdiction with respect to frontage on any navigable water, including navigable rivers. See Hayes v Bowman (1957, Fla) 91 So 2d 795, infra, § 13.

Rules and methods for apportionment and division of accretions (sometimes termed alluvion), as between riparian tracts on the same bank of the river, have been excluded from the scope of this annotation.[2] How-

1. As a few examples of rulings on the matter in connection with lakefront property, see Ulbright v Baslington (1911) 20 Idaho 539, 119 P 292, 294, infra, § 8[a], overruled on other grounds in Callahan v Price (1915) 26 Idaho 745, 146 P 732; Driesbach v Lynch (1951) 71 Idaho 501, 234 P2d 446, infra, § 8[a]; Calkins v Hart (1916) 219 NY 145, 113 NE 785, LRA 1917B 783, infra, § 8[a]; American Steel & Wire Co. v Cleveland Electric Illuminating Co. (1909) 16 Ohio LR 250, 63 WL Bull 346 (involving division lines from shore out to a government breakwater in Lake Erie, at Cleveland; the court ruling that the lines should be run perpendicular to the prolonged line of the main breakwater). And see remarks in Hardin v Jordan (1891) 140 US 371, 35 L ed 428, 11 S Ct 808, 838 (involving ownership of bed of lake under Illinois law).

For a case relative to riparian rights areas in Long Island Sound, see, for example, Rochester v Barney (1933) 117 Conn 462, 169 A 45, mentioned infra, § 2.

2. For general treatment covering the rules and methods for apportioning and drawing division lines over alluvion or accretions, as between adjoining riparian or littoral proprietors, see 56 Am Jur, Waters §§ 494–497.

As illustrative examples of cases concerned with the manner of appor-

ever, because of its general importance to the present subject, one early Massachusetts alluvion case laying down a specific rule on the matter has been set forth herein. See Deerfield v Arms (1835) 34 Mass (17 Pick) 41, 28 Am Dec 276, infra, § 14.

Of interest in connection with the present annotation may be the comment note in 89 ALR 1156, dealing with right of riparian owners on navigable water to access to the water.

Another annotation of possible interest here has covered the topic: Specific description with reference to water, in conveyance of riparian land, as marking the extent of grantee's ownership of the submerged land and the shore, 74 ALR 597.

§ 2. Principles and factors generally.

On the present topic, the most generally recognized over-all rule made evident by the cases is that in apportioning and dividing the bed of a river or the riparian rights areas in the river, as between two or more riparian tracts fronting on the same bank, in the absence of an agreement, specification, or statute, or other definitely controlling factor, the court should apportion and divide the area equitably in such a way that each of the riparian tracts will be assigned an extended frontage in the river based on and generally proportionate to the length of such tract's frontage along the riverbank or shore.

Florida. — See Hayes v Bowman (1957) 91 So2d 795, infra, § 13 (directly involving frontage on an ocean bay).

Massachusetts. — Knight v Wilder (1848) 56 Mass (2 Cush) 199, 48 Am Dec 660, infra, § 9. See Deerfield v Arms (1835) 34 Mass (17 Pick) 41, 28 Am Dec 276, infra, § 14 (involving division of alluvion along a curve in a nonnavigable river) and Wonson v Wonson (1867) 96 Mass (14 Allen) 71, infra, § 15 (division of tidal flats).

Michigan. — See Clark v Campau (1869) 19 Mich 325.

New Jersey.—Delaware, L. & W. R. Co. v Hannon (1875) 37 NJL 276.

Oregon. — Montgomery v Shaver (1901) 40 Or 244, 66 P 923.

Rhode Island. — Thornton v Grant (1873) 10 RI 477, 14 Am Rep 701.

Virginia.—Groner v Foster (1897) 94 Va 650, 27 SE 493; Waverly Water-Front & Improv. Co. v White (1899) 97 Va 176, 33 SE 534, 45 LRA 227; Cordovana v Vipond (1956) 198 Va 353, 94 SE2d 295, 65 ALR2d 138.

Washington. — See, as indicative, Spath v Larsen (1944) 20 Wash 2d 500, 148 P2d 834, infra, § 15 (involving division of tidelands on an ocean bay).

In brief, the cases make it plain that in dividing the area of a river, as between riparian tracts fronting along the same bank, the lines should be drawn so as to make an equitable

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tioning accretions or alluvion and running division lines therein as between riparian owners on the same bank, see:

United States.—Johnston v Jones (1861) 1 Black 209, 17 L ed 117 (involving accretions along shore of Lake Michigan at Chicago).

Iowa.—Todd v Murdock (1941) 230 Iowa 1121, 300 NW 284.

Kansas.—McCamon v Stagg (1896) 2 Kan App 479, 43 P 86, infra, § 6[a].

Kentucky. — Nugent v Mallory (1911) 145 Ky 824, 141 SW 850; McGill v Thrasher (1927) 221 Ky 789, 299 SW 955.

Massachusetts. — Deerfield v Arms (1835) 34 Mass (17 Pick) 41, 28 Am Dec 276, infra, § 14.

Missouri. — Doebbeling v Hall (1925) 310 Mo 204, 274 SW 1049, 41 ALR 382.

Nebraska. — Conkey v Knudsen (1943) 143 Neb 5, 8 NW2d 538.

New Hampshire.—State v Six Acres of Land (1958) — NH —, 139 A2d 75.

Oklahoma. — Goins v Merryman (1938) 183 Okla 155, 80 P2d 268, later app 190 Okla 442, 124 P2d 729.

For annotation considering: Applicability of rules of accretion and reliction so as to confer upon owner of island or bar in navigable stream title to additions, see 54 ALR2d 643.

As to right to follow accretions across division line previously submerged by action of water, see annotation in 8 ALR 640 and 41 ALR 395.

distribution of the river area between the several riparian tracts having rights therein.

For the most part the authorities are in agreement that in the apportionment of appurtenant areas of the river from the shore out to or toward the thread, it is the extent of the individual riparian tract's frontage on the riverbank or shore which controls the apportionment of the area in the river, rather than such riparian tract's depth, area, or configuration, or the direction in which its upland sidelines run.

Arkansas. — See dicta along this line in the Arkansas cases mentioned in the appended footnote.[3]

Massachusetts. — Knight v Wilder (1848) 56 Mass (2 Cush) 199, 48 Am Dec 660, infra, § 9.

Michigan.—Clark v Campau (1869) 19 Mich 325, infra, §§ 5[a], 8[a].

Virginia.—Groner v Foster (1897) 94 Va 650, 27 SE 493; Waverly Water-Front & Improv. Co. v White (1899) 97 Va 176, 33 SE 534, 45 LRA 227; Cordovana v Vipond (1956) 198 Va 353, 94 SE2d 295, 65 ALR2d 138.

See particularly for this view the Michigan court's observations in Clark v Campau (1869) 19 Mich 325, summarized infra, § 5[a].

In Groner v Foster (1897) 94 Va 650, 27 SE 493, the court observed that the rule under which each proprietor was to have a length on the line of navigability proportionate to the length of his line on the shore was not disputed by the parties but was conceded to be the correct and controlling rule.

Some authority is to the effect that as a basis for allocating to a riparian tract its proportionate frontage length along the thread of the stream or along some intermediate line in the river, such as the line of navigable or deep water, the tract's frontage along the shore or bank of the river should be measured in a general way or along a base line, disregarding unusual projections or irregularities in the general shore line.

Thus, a Virginia case is to the effect that where one of several riparian owners had filled in and built wharves out to the port warden's line in front of one portion of its shore line, the additional shore line so made by filling in should not be included in the measure of that owner's shore line in apportioning the respective property areas in the water out to the harbor line, the proper method being to ascertain and measure the shore line as if the filling in had not been done. Lambert's Point Co. v Norfolk & W. R. Co. (1912) 113 Va 270, 74 SE 156, infra, §§ 12, 14.

And the view that the general, available line of the shore, instead of its length as elongated by deep indentations or sharp projections, should be the measure applied, was stated in an important Massachusetts case involving division of alluvion—a question excluded from but very closely related to the present topic. See Deerfield v Arms (1835) 34 Mass (17 Pick) 41, 28 Am Dec 276, infra, § 14.

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On the whole, the case law indicates that in the judicial allotment and division of riparian rights areas in a river or river bed as between two or more riparian tracts lying along the same bank, the tribunal's objective should be to arrive at an

3. Several Arkansas cases, none of them factually within the scope of this annotation, contain judicial statements to the effect that a riparian owner on a nonnavigable stream is entitled to the bed of the stream out to the center thereof, ratably with other riparian proprietors, the extent of the interest depending upon the frontage on the stream. See Barboro v Boyle (1915) 119 Ark 377, 178 SW 378 (holding a lake to be navigable); Lutesville Sand & Gravel Co. v McLaughlin (1930) 181 Ark 574, 26 SW2d 892 (holding a river to be navigable, so that a riparian owner had no title to the bed thereof); Goforth v Wilson (1945) 208 Ark 35, 184 SW2d 814 (involving boundary between opposite riparian owners as affected by changes in course of river).

equitable apportionment and division which will give each of the riparian tracts an abutting riparian rights area in the river proportionate to the extent of such tract's general frontage along the riverbank or shore, and to draw the division lines in the river or river bed in such a way as to preserve each riparian tract's direct connection with and access to its appurtenant area of the river, it being particularly important that divisional sidelines from the shore out to the thread of the stream or out to some other terminus in the river (such as the pierhead line or line of navigable water) should be located so as not to deprive any riparian tract of its proportionate frontage rights on such outer line. See particularly Clark v Campau (1869) 19 Mich 325, infra, § 8 [a]; Delaware, L. & W. R. Co. v Hannon (1875) 37 NJL 276, infra, § 12; United States v Ruggles (1861, CC NY) 5 Blatchf 35, F Cas No 16204, infra, § 8[a]; Montgomery v Shaver (1901) 40 Or 244, 66 P 923, infra, § 8[a]; Cordovana v Vipond (1956) 198 Va 353, 94 SE2d 295, 65 ALR2d 138.

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The courts have tended to recognize that the judicial rules or methods for the apportionment and division of the appurtenant frontage area of a river as between two or more riparian tracts fronting on the same bank are not absolute but are subject to variation or exception where necessary to avoid an inequitable result; and that the applicability of a specific rule or method depends largely upon the particular factual situation required to be dealt with. It seems reasonable to say, on the whole, that what may be termed the geographical facts and equities of the particular situation have usually been given careful consideration by the courts in determining the proper rule or method of apportionment and division to be applied in the case at bar. See in this connection § 4, infra.

As stressing and pointing out why "it is absolutely impossible to formulate a mathematical or geometrical rule that can be applied to all situations of this nature," see the instructive opinion in Hayes v Bowman (1957, Fla) 91 So2d 795, infra, § 13.

One of the leading judicial discussions of the present topic is found in Groner v Foster (1897) 94 Va 650, 27 SE 493, in which the court said: "Every riparian owner has the right to the water frontage belonging by nature to his land. This right includes, among others, the right of access from the front of his land to the navigable part of the water course, and also the right to the soil under the water between his land and the navigable line of the water course, whereon he may erect wharves, piers, or bulkheads for his own use or the use of the public, subject to such rules and regulations as the legislature may see proper to impose for the protection of the public. Gould, Waters, § 149; Norfolk City v Cook, 27 Grat. 430; Railway Co. v Faunce, 31 Grat. 761, Dutton v Strong, 1 Black, 23; and Yates v Milwaukee, 10 Wall. 497. In this state the enjoyment of the right is made subject by statute to the limitation that its exercise shall not result in the obstruction of navigation, nor in other injury to the private rights of any person. Code Va. § 998. Each riparian proprietor is entitled, in conformity to such right, to have the extent of its enjoyment upon the line of navigability of the water course determined and marked, and his proper share of the flats or land under the water for the purposes aforesaid set apart, and its boundaries defined. A court of equity has jurisdiction, and is the proper tribunal, to make the apportionment, and to determine and establish the boundary lines of the coterminous owners. In making the apportionment the prime object, upon plain principles of justice, should be to give to each proprietor of the shore, and as directly in his front as practicable, a parcel of the land under the water of a width at its outer end upon the line of navigability proportioned to that which it has at the inner or shore end. Wonson v Wonson, 14 Allen 71; and Gould, Waters, §§ 162, 163."

These points are quite generally

[§ 2]

reiterated in the recent case of Cordovana v Vipond (1956) 198 Va 353, 94 SE2d 295, 65 ALR2d 138.

A Connecticut opinion, concerned with the division of riparian rights areas in the waters of Long Island Sound, states that the fundamental riparian right (on navigable water) is the right of access by water to and from the upland, and that in apportioning riparian rights the object to be kept in view is to so extend the lateral lines of adjoining owners of upland as to secure to each rights appropriate to, and over an area proportioned in extent to, his shore lines. See Rochester v Barney (1933) 117 Conn 462, 169 A 45.[4]

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A Michigan opinion points out that much of the confusion which is supposed to exist on the subject of division lines in water areas has arisen from confounding things quite dissimilar; that controversies concerning riparian rights upon waters having no middle thread, properly so-called, can have no bearing on rivers; and that it is manifest that upon the open sea or on a bay or other body of water having no defined stream running in a confined and continuous bed, the shore may be the only tangible element of computation or measurement, and it has very properly in such cases been regarded as the most important. Bay City Gaslight Co. v Industrial Works (1873) 28 Mich 182, infra, § 8[a]. See also Blodgett & D. Lumber Co. v Peters (1891) 87 Mich 498, 49 NW 917, 24 Am St Rep 175, infra, § 8[a] (which involved division of frontage areas in Green Bay), and Lambert's Point Co. v Norfolk & W. R. Co. (1912) 113 Va 270, 74 SE 156, infra, §§ 12, 14.

An important federal case on this topic states that while the settlement of the respective riparian rights of adjacent propery owners may be easy on a straight shore line, it becomes very difficult on an irregular shore line; that there are no general rules whose application will solve every case; and that it is highly important in the harbor of a great city that the solution of such questions be made with regard not only to the rights of property owners, but also with regard to the safety and welfare of the public. Baltimore v Crown Cork & Seal Co. (1941, CA4 Md) 122 F2d 385, infra, § 11[b]. Generally, for specific rulings as to frontage projection division lines on curving or irregular shores or channels, see § 14, infra.

Distinctions between navigable and unnavigable rivers should be kept in mind in considering the cases on the present topic. To a somewhat limited extent it appears that the navigable or unnavigable character of the river can be a factor in the determination of how the area of the river should be apportioned between the adjacent riparian tracts of land. One matter of distinction is that the proprietor of a tract of riparian land lying on one side of a nonnavigable river generally is held to own title to the river bed in front of his riparian land out to the thread of the stream, while the proprietor of land fronting on a navigable river generally does not own the fee of the adjacent river bed, but merely has certain riparian rights in and over his appropriate portion of the river in front of his riparian land. On a navigable river one of the most important of the riparian rights is that of access from the riparian land out to the line or area of navigable water.

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Division lines of riparian rights areas in a river are sometimes fixed by and rested upon circumstances involving acquiescence, estoppel, or adverse possession and several instances

4. This case involved a very complex shore line and a determination that the division made by the trial court was not an appropriate one under the circumstances. The opinion includes a plat of the area and sets forth a summary of the applicable rules, but notes that no rule can be laid down which is applicable to every situation, much depending upon the shape of the upland, the arm of the sea, and their relative position to each other.

in which one of these doctrines was controlling are found herein. For particular instances, see:

United States.—Baltimore v Crown Cork & Seal Co. (1941, CA4 Md) 122 F2d 385, infra, § 11[b].

Maine.—Treat v Chipman (1852) 35 Me 34, infra, § 15 (riparian tidal flats).

New Jersey.—Stockham v Browning (1867) 18 NJ Eq 390, infra, § 6[b].

New York. — O'Donnell v Kelsey (1852) 10 NY 412, infra, § 14.

Rhode Island.—Brown v Goddard (1880) 13 RI 76, infra, § 6[b].

§ 3. Statutory factors; control by municipality or other governmental body.

[a] Generally.

The manner in which riparian rights areas in a river should be apportioned and division lines fixed therein as between two or more riparian tracts lying along the same bank or shore of the river may be governed or influenced by the provisions of local statutes or ordinances existing in the particular jurisdiction. Investigators of the subject should make a check for the existence and terms of local statutes, ordinances, or other governmental regulations which may control the question. This annotation notes the existence and effect of such statutes and ordinances as are made evident by the reported cases on this topic, but does not undertake to index or give the terms of current statutory law relative to the matter of such apportionment and division. It may be said, however, that the cases indicate that specific statutory or other governmental regulation of the matter is not uncommon, particularly with reference to navigable rivers and water-front areas in municipalities.

Attention is directed to the following cases herein in which a statute or ordinance controlling or having some bearing on the question at bar was involved:

United States.—For federal cases involving state law, see state headings infra.

District of Columbia. — Martin v Standard Oil Co. of New Jersey (1952) 91 App DC 84, 198 F2d 523, infra, § 3 [b].

Florida. — Merrill-Stevens Co. v Durkee (1911) 62 Fla 549, 57 So 428, infra, § 10; Holland v Ft. Pierce Financing & Constr. Co. (1946) 157 Fla 649, 27 So 2d 76, infra, § 10; Hayes v Bowman (1957) 91 So 2d 795, infra, § 13.

Maine.—Emerson v Taylor (1832) 9 Me 42, 23 Am Dec 531, infra, § 15 (relating to tidal flats, the court referring to the principle of the Colonial Ordinance of 1641 as being a part of the state's common law).

Maryland.—Classen v Chesapeake Guano Co. (1895) 81 Md 258, 31 A 808; Councilman v Le Compte (1941) 179 Md 427, 21 A2d 535, infra, § 16 (statute relative to location of duck blinds); Baltimore v Crown Cork & Seal Co. (1941, CA4 Md) 122 F2d 385, modg Mutual Chemical Co. v Baltimore (DC Md) 33 F Supp 881.

New Jersey.—Delaware, L. & W. R. Co. v Hannon (1875) 37 NJL 276, infra, § 12 (statute authorizing riparian owner on tidewaters to build docks or wharves upon the shore "in front of" his lands).

New York. — United States v Ruggles (1861, CC NY) 5 Blatchf 35, F Cas No 16204, infra, § 8[a].

Pennsylvania.—Ball v Slack (1837) 2 Whart 508, 30 Am Dec 278 (referring to statutes of 1785 and 1809 regulating lines within which owner on shore could exercise fishing rights).

Rhode Island.—Taber v Hall (1902) 23 RI 613, 51 A 432.

Virginia.—Lambert's Point Co. v Norfolk & W. R. Co. (1912) 113 Va 270, 74 SE 156, infra, § 14. And see generally the other Virginia cases reviewed in § 14, infra.

Classen v Chesapeake Guano Co. (1895) 81 Md 258, 31 A 808, brings out that by a statute the mayor and city council of Baltimore City were authorized to prescribe the extent and mode within which riparian owners may make improvements in front of their lots, and when they bound upon

a concave shore, to declare what the front of a particular lot shall comprehend upon the bulkhead or port warden's line; and the case construes a city ordinance of 1881 and a map therein referred to as establishing the limits of certain shore properties out to and along the bulkhead and pierhead lines in the Patapsco River in front of the respective properties.

To the effect that the Baltimore City Charter, 1938, granted the city power to establish divisional lines between adjoining landowners in the waters of the Patapsco River, but that in the instance at bar, the city had not officially prescribed such divisional lines, see Baltimore v Crown Cork & Seal Co. (1941, CA4 Md) 122 F2d 385, infra, § 11[b], wherein the city was held estopped as to a certain division line appearing upon a map or plat never officially adopted.

Note also, in Maryland, Art 54 § 47 of the Maryland Code, which was referred to in Mutual Chemical Co. v Baltimore (1940, DC Md) 33 F Supp 881, mod Baltimore v Crown Cork & Seal Co. (CA4) 122 F2d 385, supra, prescribing that the proprietor of land bounding on any of the navigable waters of the state "shall be entitled to the exclusive right of making improvements into the waters in front of his said land. . . . But no such improvements shall be so made as to interfere with the navigation of the stream of water into which the said improvement is made."

As shown in Taber v Hall (1902) 23 RI 613, 51 A 432, infra, § 11[a], a Rhode Island statute enacted in 1885 provided a procedural system for the determination and settlement of water area boundaries on public tidewater by application to a court, which was to appoint 3 commissioners to make a survey and determine and recommend to the court a plan of division. The opening portion of the statute specified that any person having any interest in land bordering on public tidewater, whenever a harbor line shall have been confirmed and established in front of or adjacent to said land, may apply by petition to the appellate division of the Supreme Court in Providence for the settlement and determination of the lines and boundaries of his interest and of the interests of all others in the land covered by public tidewater within such harbor line.

Ball v Slack (1837, Pa) 2 Whart 508, 30 Am Dec 278, which seems not to involve precisely the question under annotation, refers to statutes of 1785 and 1809 regulating lines within which an owner on the shore could exercise fishing rights, one statute relating to the Delaware River and the other to the Schuylkill. The somewhat differing provisions of the two statutes and the interpretation thereof by the court, which appears to be only dictum, are not made very clear by the opinion. See reference to this case in Kreiter v Bigler (1882) 101 Pa 94, infra, § 9.

For consideration of the possible effect of the federal government's system for surveying the public lands on the rectangular township, section, and subsection basis, see § 6[a], infra.

[b] Where local authority empowered to fix division lines has not acted.

Where a municipality or municipal body has been granted statutory authority to prescribe the division lines in the riparian rights area of a river as between the several tracts of land fronting on such river, but has failed to act so as to designate such division lines, there is some judicial authority to the effect that a court should not attempt to fix the division lines in the river area, but should leave that matter for determination by the authorized municipal body. See Martin v Standard Oil Co. of New Jersey (1952) 91 App DC 84, 198 F2d 523; and Baltimore v Crown Cork & Seal Co. (1941, CA4 Md) 122 F2d 385, modg Mutual Chemical Co. v Baltimore (DC) 3 F Supp 881, infra § 11[b].

Thus, a controversy between adjoining riparian owners on the Anacostia River in the District of Columbia as to the location of division lines and wharves in the river area in front of their respective properties was involved in Martin v Standard Oil Co.

of New Jersey (1952) 91 App DC 84, 198 F2d 523, but the court did not rule as to the proper location of such division lines, holding, rather, that plaintiff could not prevail in the suit because it did not appear that the riparian boundaries or division of the river area had been fixed under rules or regulations adopted by the district commissioners, and consequently plaintiff was unable to prove encroachment on her riparian area.[5] The opinion is of interest as showing that plaintiff's lot and the lots of the two defendant oil companies lying immediately north of a street forming the north boundary of plaintiff's lot all bordered on the east on the Anacostia River, which ran on a curving line in a southwesterly direction in front of such properties; that the oil companies maintained a wharf and dock which projected into the river at right angles to the bulkhead line, the end of such dock being out in the river in front of a portion of the plaintiff's lot if the boundaries of her lot were regarded as extending due east into the river to the channel rather than being drawn out into the river at right angles to the bulkhead line; and that some early surveys of Washington showed wharves extending into the Anacostia River at right angles to the shore line and others showed the boundaries of the shore lots in question as continuing due east into the river in the same course as the onshore side lines; but it was considered that the evidence did not establish that the district commissioners had ever officially fixed the riparian area boundaries of the lots in question and had not given a certain map known as the Hazen map (made in 1933 by the surveyor of the district, showing riparian boundaries as running into the river at right angles to the bulkhead line) the status of "rules and regulations" which Congress had authorized the commissioners to adopt. And the court quoted approvingly a statement by the Maryland court that the fair distribution of space into which riparian owners may be permitted to project wharves is pre-eminently work for special officials made familiar with the demands of all navigation and all wharfing there, not for the processes of a court of law.[6]

II. Specific rules, methods, and determinations

§ 4. In general.

As a general cautionary remark, it should be said at the outset that the various specific rules or methods of apportionment or division adopted in the cases on the present subject generally must be viewed in the light of the particular situation before the court. Such rules apply to particular situations or types of situations and generally are regarded as subordinate to the over-all principle that the apportionment and division must be one which is equitable to all concerned.

Thus, while many specific rules or methods for apportioning and dividing the riparian rights area of the river as between several riparian tracts lying along one bank have been expressed and applied by the courts, it has frequently been recognized by judicial authorities that the specific rules stated or applied are not unbending but are subject to modification to insure an equitable apportion-

5. The opinion notes that a statute (Act of 1899, 30 Stat 1577, § 1) gave the district commissioners power to make all needful rules and regulations for the government and control of "all wharves, piers, bulkheads, and structures thereon, and waters adjacent thereto within the pier lines, and all the basins, slips, and docks, with the land under water, in said District not owned by the United States or the District of Columbia."

6. The quotation was from Cahill v Baltimore (1938) 173 Md 450, 196 A 305, in which a petitioner sought mandamus to compel the city to issue him a permit to fill in and wharf out into the Patapsco river beyond the pierhead line established by city ordinances, which pierhead line, at the point in question, coincided with the existing shore line of petitioner's land.

ment and division of the area in the particular situation required to be adjudicated.

And along this line a New Jersey court, in dealing with the present problem, has stated that it is not probable that any precise formula, applicable to every case can be devised, that the general principle to work by is that when practicable, each owner is to have his full shore front; when this is not practicable, he is to have his ratable part of such front; the court observing that it did not see how the rule could be further specialized. Delaware, L. & W. R. Co. v Hannon (1875) 37 NJL 276, infra, § 12.

The Florida court, in a closely related case involving ocean bay frontage, has concluded that no absolute geometrical rule to fit all situations can be formulated. Hayes v Bowman (1957, Fla) 91 So 2d 795, infra, § 13.

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Ordinarily the division side lines projected out into the river area are drawn as straight lines from the shore out to the particular terminus in the river. Only one case has been found in which a side line in the river included an angle or bend in its course after it left the shore, and that was due to the circumstances of the particular case. See Columbia Land Co. v Van Dusen Invest. Co. (1907) 50 Or 59, 91 P 469, 11 LRA NS 287, infra, § 11[a]

As to any one riparian tract, the divisional side lines extending out into the river will be parallel or will tend to diverge or converge, depending upon the relative length of the tract's shore line as compared to the length of the outer line in the river (along the thread, or channel, or pierhead line, or the like) allotable to that particular tract. See particularly the proportional frontage projection cases in § 14, infra.

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An instructive Florida case actually relating to riparian rights areas in the waters of a navigable bay, but seemingly also applicable to the same questions with respect to the waters of a navigable river in that state, has pointed out that riparian rights do not necessarily extend into the waters according to upland boundaries nor do they under all conditions extend at right angles to the shore line; and the Florida precedents are "completely inconsistent" with the view that such rights extend over an area measured by lines at right angles to the channel. Having regard to influencing provisions of a statute, the court concluded that the rule in Florida was that in any given case the riparian rights of an upland owner must be preserved over an area "as near as practicable" in the direction of the channel so as to distribute equitably the submerged lands between the upland and the channel; and in making such equitable distribution, the court necessarily must give due consideration to the lay of the upland shore line, the direction of the channel, and the correlative rights of adjoining upland owners. Hayes v Bowman (1957, Fla) 91 So 2d 795, infra, § 13.

§ 5. Relation of division side lines in river area to upland division lines.

[a] Generally.

For the most part, the courts which have dealt with the matter have agreed that in the apportionment and division of the appurtenant riparian rights areas in a river or river bed, as between several riparian tracts fronting on one bank, the course of the divisional lines extending from the shore out to or toward the thread of the river is not controlled by the course or direction of the upland side lines dividing the respective riparian tracts; in other words, that the direction in which the upland division line between adjoining riparian tracts runs to the bank or shore of the river does not control the direction of the division line to be projected into the river in judicially apportioning and dividing the riparian rights area of the river between such adjoining riparian tracts.

United States. — For federal cases involving state law, see state headings infra.

California.—See remarks in Fraser's

Million Dollar Pier Co. v Ocean Park Pier Co. (1921) 185 Cal 464, 197 P 328, decision limited in per curiam opinion in 198 P 212, infra, § 12. The court's language refers to lands bordering upon tidewater, or upon a navigable lake or stream and the case actually involved ocean-front property.

Florida. — See Hayes v Bowman (1957, Fla) 91 So 2d 795, infra, § 13.

Maine.—Emerson v Taylor (1832) 9 Me 42, 23 Am Dec 531 (involving division of riparian tidal flats).

Massachusetts.—Knight v Wilder (1848) 56 Mass (2 Cush) 199, 48 Am Dec 660, infra, § 9.

Michigan.—Clark v Campau (1869) 19 Mich 325, infra, § 8[a]; A. M. Campau Realty Co. v Detroit (1910) 162 Mich 243, 127 NW 365, 139 Am St Rep 555. See Bay City Gaslight Co. v Industrial Works (1873) 28 Mich 182.

Nebraska.—See Application of Central Nebraska Public Power & Irrig. Dist. (1940) 138 Neb 742, 295 NW 386, infra, § 8[b].

New Jersey.—Delaware, L. & W. R. Co. v Hannon (1875) 37 NJL 276; Manufacturers' Land & Improv. Co. v Board of Commerce & Navigation (1923) 98 NJL 638, 121 A 337, affd on op below in 101 NJL 224, 127 A 924.

New York.—See United States v Ruggles (1861, CC NY) 5 Blatchf 35, F Cas No 16204, infra, § 8[a] (involving a New York statute).

North Carolina.—O'Neal v Rollinson (1937) 212 NC 83, 192 SE 688.

Oregon. — Montgomery v Shaver (1901) 40 Or 244, 66 P 923.

Pennsylvania. — Wood v Appal (1869) 63 Pa 210 (rule applied in projecting frontage out to low-water mark). And see somewhat modified view expressed in Kreiter v Bigler (1882) 101 Pa 94, infra, §§ 5[a], 9.

Rhode Island.—Thornton v Grant (1873) 10 RI 477, 14 Am Rep 701.

South Carolina.—See McCullough v Wall (1850) 38 SCL (4 Rich) 68, 53 Am Dec 715, infra, § 12.

Virginia.—Groner v Foster (1897) 94 Va 650, 27 SE 493; Cordovana v Vipond (1956) 198 Va 353, 94 SE2d 295, 65 ALR2d 138.

Wisconsin.—Menasha Wooden Ware Co. v Lawson (1888) 70 Wis 600, 36 NW 412, infra, § 5[b] (point conceded); Farris v Bentley (1910) 141 Wis 671, 124 NW 1003. See Superior v Northwestern Euel Co. (1917) 164 Wis 631, 161 NW 9.

Thus the New Jersey court has ruled that the direction of side lines as between riparian owners from the shore out to the pier line on a navigable tidal river are not controlled by the direction in which the side lines run over land to the water, but where the shore is relatively straight, are to be run out at right angles from a base line representing the course of the shore at high-water mark, and this is so notwithstanding that an original proprietor of the entire tract, in subdividing it, drew the lot lines so that they did not meet the shore at right angles thereto and so that the side lines of one lot were not parallel but converged toward the shore and gave that lot less shore frontage than the lot retained by the subdivider. Manufacturers' Land & Improv. Co. v Board of Commerce & Navigation (1923) 98 NJL 638, 121 A 337, affd on op below in 101 NJL 224, 127 A 924.

It was held in Clark v Campau (1869) 19 Mich 325, a controversy between the owners of two adjoining tracts of land bounded by the Detroit River, that the division line between such two tracts in the water area of the river was not controlled by the direction of their division line over the upland, but, starting at the point where the upland division line struck the shore, was to run into the river at right angles to the thread of the stream. The court said that the right to land under water, extending from the shore toward the center or thread of the stream, has always been deemed as appurtenant to the shore itself and it has no reference whatever to the extent of the riparian owner's possessions back from the shore, and is the same whether those possessions consist of a deep parcel or a mere strip

of shore. This right to the water-covered lands in front, the court said, has always been held to exclude any adjacent claimant from intercepting in any way the full extent indicated by the width at the shore, without reference to whether the tract approaches the shore at right angles or diagonally. The court added that where the stream is straight, the water front will be bounded by lines drawn at right angles with the thread of the stream, protracted until they reach the ends of the shore line, and where the stream curves the same principle applies, and the lines running from the shore would converge or separate, according as the land lay within or without the curve. In all cases, said the court, where the ownership of submerged land or of alluvial increments, appurtenant to riparian ownership has come in question, the only elements which have ever been considered by the courts have been the shore lines and the central line or thread of the stream, and the partition among adjoining owners has been made with reference to those lines, but never with any reference whatever to the direction of the boundaries or the extent of the domain on the uplands, the aim in every instance having been to secure to each owner such share as was indicated by his shore line, and not by his lands back of it.

Emphasizing that in making the apportionment the prime object should be to give to each proprietor of the shore, and as directly in his front as practicable, a parcel of the land under the water of a width at its outer end upon the line of navigability proportioned to that which it has at the inner or shore end, the court in Groner v Foster (1897) 94 Va 650, 27 SE 493, said that it was plain that such object could not be attained by a fixed rule of extending out to the line of navigability of the watercourse the divisional lines between the proprietors of the uplands in the same direction that those lines reached the shore. An extensive quotation from this opinion, setting forth reasons supporting this position, is found in Cordovana v Vipond (1956) 198 Va 353, 94 SE2d 295, 65 ALR2d 138.

Although the case involved ocean bay frontage, rather than river-front land (and so is not technically within the scope of this annotation) a good illustration of the damage which would be inflicted upon an owner of a lot fronting on navigable water, whose lot lines ran to the water at approximately right angles to the shore, if a nearby riparian owner whose upland line struck the shore at an acute angle bearing toward the other lot were to be permitted, in wharfing out, to build his wharf upon lines corresponding to the upland side line boundary of his land, thereby occupying the river immediately in front of the other lots and cutting their owners off from access to navigable water, is found in the situation involved and illustrated by a plat in Oregon Coal & Nav. Co. v Anderson (1913, CA9 Or) 206 F 404, involving lands fronting on Coos Bay. The opinion is to the effect that the extension of the side line boundaries out from the shore must be at a right angle to the shore line or the line of navigable water.

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On the other hand, a limited amount of authority has considered that in dividing the frontage area in the river, the upland division line between adjacent riparian tracts should be prolonged in its same course out into the river. Rector v United States (1927, CA8 Okla) 20 F2d 845 infra, § 6[a] (apparently so ruling); Bond v Wool (1890) 107 NC 139, 12 SE 281, infra, § 6[a]. And see McCamon v Stagg (1896) 2 Kan App 479, 43 P 86, infra, § 6[a] (involving division line over accretions and so not strictly within our scope).

Statements of these cases appear in § 6[a], infra. Particular attention is directed to the ruling in the Rector Case (1927, CA8 Okla) 20 F2d 845 supra, involving river-bed oil rights.

Although the case was really concerned with the manner of extending

division lines of abutting property out to the center of an abandoned turnpike, there is judicial language in Kreiter v Bigler (1882) 101 Pa 94, to the effect that where the upland side lines of a tract fronting on a navigable river are parallel, rather than converging or diverging, a simple extension of such lines from the bank out to the low-water line would, under ordinary circumstances, secure the proper frontage. See the exposition of this case infra § 9, in footnote 20.

And there are a few cases in which, under circumstances showing acquiescence or estoppel, it has been considered that in the particular instance the line of division in the river must be a direct continuation and extension of the upland division line.

Maine.—Treat v Chipman (1852) 35 Me 34, infra, § 15 (involving line over riparian tidal flats).

New Jersey.—Stockham v Browning (1867) 18 NJ Eq 390, infra, § 6[b].

New York.—O'Donnell v Kelsey (1852) 10 NY 412, affg 6 NY Super Ct (4 Sandf) 202, infra, § 14.

Rhode Island.—Brown v Goddard (1880) 13 RI 76, infra, § 6[b].

For an illustrative ruling construing a particular grant of submerged land in a river as meaning that the upland boundary lines of a prior grant were to be continued into the river in their same course, see Hagan v Campbell (1838, Ala) 8 Port 9, 33 Am Dec 267, infra, § 6[a].

[b] Upland side lines as determining points of departure.

The points at which the several upland side lines of the various tracts along the river intersect the bank or shore (or high or low-water mark) of the river will of course determine the points of departure from which the respective side lines will be projected out to or toward the thread of the river or other terminal line in the river in apportioning the river area between the various riparian tracts lying along the same bank or shore. Similarly, if the river area side lines are considered as being projected from a base line out in the river toward the shore, their respective onshore termini will be at the points at which the upland side lines of the particular riparian tract meet the bank or shore or other determinative line along the margin of the river. These propositions seem to have been assumed and unquestioned in the cases on this topic.

However, there may be some differences, from jurisdiction to jurisdiction, as regards just what line along the shore or bank should be taken as the terminal of the upland division lines; sometimes the survey or plat carries the side lines only down to a meander line run along or near the bank of the river, and sometimes the side lines are considered to extend to high-water mark, or low-water mark, or to the general water line, with resulting differences as to the precise starting points for extending or projecting the divisional side lines into the river area.

It has been held, by an instructive Wisconsin case, infra, that as to "government" lots or subdivisions sold by the United States under a survey and plat showing a river as a boundary, it is the actual shore line of the river rather than the meander line of the government survey which controls the point on the upland division line from which the projected division line is to be run out perpendicular to the thread of the river.

Applying the settled principle that it is the river itself rather than the meander line alongside the river which constitutes the boundary on the river side of land surveyed and sold by the federal government under a survey and plat showing such tract of land as being a government lot or other governmental subdivision bounded on one side by the river, the court in Menasha Wooden Ware Co. v Lawson (1888) 70 Wis 600, 36 NW 412, held that as between two numbered government lots lying side-by-side on the south bank of the Fox River, which ran at an oblique angle in front of such lots, where the actual shore line of the river at the time of

the government survey was shown to be located some 320 feet north of the point where the north-south division line between the lots intersected the surveyed meander line along the high bank of the river, the starting point for projecting the division line between these lots out perpendicularly to the thread of the stream must be the point at which the north-south division line of the government survey reached the actual shore line of the river instead of the point where such division line intersected the meander line. The court said that it thought the cases clearly established the rule that on all sales of land by the United States, of lots which are platted as bounded by a river, the purchaser takes to the shore or bank of the river, "and the meander line, not being a boundary or in any way referred to as such in the conveyance, it cannot have any effect in giving direction to the lines of the lot as designated on the government plat."[7] The opinion sets forth a plat graphically illustrating the very considerable difference in distribution of the river area turning upon this decision. Both parties were agreed that the division line between the two riparian lots should be projected out to the thread of the stream as a line perpendicular to such thread or mid-line of the river, the dispute being simply as to the starting point of that perpendicular line.

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In Oregon the shore terminus has been stated to be the line of ordinary high water. Montgomery v Shaver (1901) 40 Or 244, 66 P 923, infra, § 8[a].

However, in Virginia, it has been held (construing a statute) that the riparian owner's upland division line is to run on its same course down to low-water mark.

Thus, while it was recognized in Groner v Foster (1897) 94 Va 650, 27 SE 493, that, in extending division lines from the shore out to the port warden's line of navigability, the direction of the upland side lines was not controlling and the lines in the water were to be extended so as to give each proprietor a length on the line of navigability proportionate to the length of his shore line, the court further held that under Virginia law the proprietor of land on navigable water owned to the low-water mark and that, in ascertaining the length of each owner's shore line, his upland boundaries were to be extended in their same course down to low-water mark without variation from the direction in which they reached ordinary high-water mark.[8]

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7. The court observed: "We think the cases . . . , expressly hold that the meander lines made by the government surveyors are not to be considered in determining the actual boundaries of lots which are sold by the government as bounded upon rivers or other navigable waters. The government plats show on their face no meander lines as different from the actual banks or shore of the rivers upon which such lots are described as lying. The purchaser does not know the meander lines, and does not purchase with any regard to them. He purchases a lot bounded on either two or three sides by straight lines, and on the other side by the river as shown upon the plat. . . . If, therefore, the actual meander line is no part of the actual boundary of the lot purchased from the government, it would seem to have no efficacy in changing the direction of the actual boundary lines of the lots in its course to the river."

8. It was pointed out that the current Virginia statute declared that the limits or bounds of the several tracts of land lying on the said bays, rivers, creeks, and shores, and the rights and privileges of the owners of such lands, "shall extend to low-water mark, but no further, unless where a creek or river, or some part thereof, is comprised within the limits of a lawful survey." The court said that the limits or boundaries of the lands being extended by the law down to low-water mark, it necessarily followed, in the absence of any direction in the statute to the contrary, that such boundaries must be extended in the same direction that they reach ordinary high-water mark.

To the same effect is Cordovana v Vipond (1956) 198 Va 353, 94 SE2d 295, 65 ALR2d 138, which stresses that the upland division line is to run on its same course to low-water mark but no farther.

§ 6. — Extending upland side lines into river without change of direction.

[a] Generally.

While, as shown in § 5[a], supra, it is more generally considered that the direction in which the upland side lines of the several riparian tracts run down to the river does not control the direction of the divisional lines to be projected out into the riparian rights area in the river in front of such tracts, there are a few instances in which courts have ruled that in dividing the appurtenant area of the river, the upland division line between the tracts should be extended directly in its same course out into the river area, such rulings not being rested upon any theory of acquiescence or the like, but possibly distinguishable from the general run of cases because of the circumstances of the individual situation brought before the court.

Although the shore line along a creek which was an arm of Edenton Bay was irregular, it seems to have been assumed both by the parties and the court in Bond v Wool (1890) 107 NC 139, 12 SE 281, that in extending the division line between two adjoining lots out to the line of deep water, such line over the water area should be run in the same course as it ran over the land. It appeared that the high-water line of the creek or bay formed the southern boundary of the two lots and that the side lines of the lots ran approximately north and south and struck the high-water line at approximately right angles. In the area in the water south of his lot plaintiff maintained certain fish houses and a wharf, and he complained that defendant was constructing in the water a structure which would cut off plaintiff's access to the navigable water of the bay, but it was shown that defendant's structure was being placed to the south of his lot and within the area formed by the extension of his side-line boundaries in their same course into the water, and that plaintiff would still have access to the navigable water within the area of the lines of plaintiff's lot extended in their same course to the south, and so must be denied injunctive relief against the construction being made by defendant in his own water-front area. The court stated that the qualified property in the water-front area, necessarily incident to riparian ownership, extends to the submerged land bounded by the water front of a particular proprietor, the navigable water and two parallel lines extended from each side of his front to navigable water.[9]

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The factual background necessary to an appraisal of the ruling in Rector v United States (1927, CA8 Okla) 20 F2d 845, infra, is found in United States v Hayes (1927, CA8 Okla) 20 F2d 873, cert den 275 US 552, 555, 72 L ed 421, 423, 48 S Ct 115, 116, which shows that in 1852 the United States had patented to the Creek tribe of Indians a large body of land which included portions of the Arkansas River and the Cimarron River; that subsequently the government caused the lands to be surveyed, such survey not including the beds of the two rivers but meandering the banks thereof, the uplands being surveyed into tracts of 160 acres in accordance with the usual government survey procedure; and that later, under legislation adopted in 1901 and 1902, the government allotted the lands to individual Indians upon the basis of 160 acres to each allottee, such al-

9. The Bond Case seems to have been distinguished in O'Neal v Rollinson (1937) 212 NC 83, 192 SE 688, infra, § 12, as one in which the property lines on land approached the shore line at right angles, so that of necessity the course of such lines was not varied in extending them over the water area.

lotments being bounded by the governmental survey; and that the government also made sales to individuals of various unallotted tracts. At the time of the allotments the river-bed land was comparatively worthless but later oil was discovered therein. It was held in the Hayes Case that the intent and legal effect of the plan of allotment pursued by the government was that the allotees and purchasers of riparian tracts bounded by the meander line along the Cimarron River acquired title from the meander line out to the thread of the river, with the result that such riparian owners were entitled to the benefit of the mineral production from such river-bed lands as against the claim of the United States that the river-bed lands remained the property of the Creek nation and had not been included in the grants and allotments of the adjacent uplands.

In Rector v United States (1927, CA8 Okla) 20 F2d 845, which decided how the oil and gas royalties derived out of the mineral production long carried on in the river bed of the Cimarron River under various leases (some of them made by the State of Oklahoma under a claim of title to the land, which it had abandoned when the river was held to be nonnavigable) should be divided, the court held that the recovery of an owner of a particular upland tract riparian to the river (who as such riparian owner had title out to the thread of the stream) was to be confined to such owner's portion of the impounded royalties, bonuses, and rentals accruing from her river-bed lands, and, said the court, "We think her boundaries as to such lands are to be determined by producing the boundary lines of her upland property directly to the thread of the stream and by the thread of the stream between such lines so produced."[10] The court added that if there were bonuses and rentals which, in gross, covered this and other river-bed lands, they should be divided on the basis of area of river-bed lands covered thereby. The foregoing quotation is found at page 872 of the very extensive opinion which rules upon numerous other points not pertinent to the present topic.

It was held in McCamon v Stagg (1896) 2 Kan App 479, 43 P 86, as expressed in the syllabus by the court, that where two irregular pieces of ground lie upon the north side of the Kansas River, at a point where the course of the river is southeast, and are separated from each other by a half quarter-section line, running north and south, the accretions formed by the recession of the river to the south belong to the respective tracts of land lying immediately north thereof, and the division line between the two tracts continues to be the half quarter-section line extended. While this case involved division of accretions, and so is beyond the general scope of the annotation (as noted in § 1, supra), it is mentioned because the method of drawing the division line agrees with that apparently

10. The opinion does not say anything more on the point made in the above-quoted language and contains no plat showing the announced method of division. In its geometrical sense, "produce" means 'to extend; prolong; as, to produce a side of a triangle." Webster's New Collegiate Dict (2d ed; G. & C. Merriam Co.) In the absence of further elaboration in the opinion, we have construed the quoted phrase "by producing the boundary lines of her upland property directly to the thread of the stream," as meaning that the upland division lines were to be extended out to the thread of the stream without any deviation from the direction in which they ran over the upland. It is possible, however, that the court, in saying "directly to the thread of the stream," meant that the lines should run out by the most direct course to the thread, which would mean that the lines were to be run so as to meet the thread of the river at right angles.

Generally, for cases ruling that the division line in the area of the river was to be run out at right angles to the thread of the stream, see § 8, infra.

adopted in the Rector Case (F) supra.

Along this same line, although the question in the case was whether an island in the Snake River which existed at the time of the government survey but was not shown by such survey belonged to the several owners of certain lots of fractional sections abutting the meander line east of the river or to a third person who had long occupied the entire island and had applied for and obtained a survey thereof by the government, and there seems to have been no actual controversy as to the direction in which the sideline between the owners on the riverbank was to be extended westerly over the water, an Idaho case may be of interest for the fact that the resurvey made by the federal government indicated the section lines and subsection lines as extending over the island, and the Idaho court seems to have considered that the island, because lying to the east of the main channel of the river, belonged to the proprietors of the upland lying east of the river, and that the division between those two proprietors would be upon the line extended westerly from and in the same course as the section line division between their respective holdings on the upland shore. Lattig v Scott (1910) 17 Idaho 506, 107 P 47, revd Scott v Lattig, 227 US 229, 57 L ed 490, 33 S Ct 242, 44 LRA NS 107, and overruled on other grounds in Callahan v Price (1915) 26 Idaho 745, 146 P 732. The United States Supreme Court held that, the island being in existence when the original survey was made but having been omitted therefrom, purchasers of riparian tracts on the east side of the river did not acquire title to the island, but such area remained public land belonging to the United States which was subject to the later survey by the government and disposition to the occupying claimant under the Homestead Law, with the result that neither of the riparian owners on the east side of the river had any claim to the island lying opposite their land. This reversing opinion had no occasion to and did not discuss how the divisional boundary line over the river and island should be drawn. The Idaho opinion and the LRA report of the United States Supreme Court opinion both contain a plat of the area.

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The view apparently taken in the Rector Case (1927, CA8 Okla) 20 F2d 845, supra, and the corresponding view indicated by the foregoing Idaho and Kansas cases, suggest and lend some support to the idea that in the regions of the United States where the federal government has followed the rectangular township and section method of survey[11] and it is customary to convey and describe land in accordance with such government survey, under which the section lines and subsection lines run north and south or east and west and the survey lines may be interrupted by meander

11. There are vast portions of the United States in which land generally is described and conveyed in accordance with the uniform method of survey adopted by the federal government, under which the public lands were surveyed and platted into rectangular tracts known as townships, sections, and minor legal subdivisions thereof. Under this system, the townships and sections are bounded by lines running north and south, according to the true meridian, and by east-west lines crossing such other lines at right angles. See 43 USC § 751. And one requirement of the federal statutes providing for such survey was that certain subsection dividing lines be run north and south or east and west. See 43 USC § 753.

Under this system of surveying the public lands, it was customary for the surveyors to run meander lines along both banks or sides of any substantial river, stream, or body of water intersecting a north-south or east-west survey line. And ordinarily, it seems, the particular section line or other north-south or east-west line would be continued along its same course after such interruption by the meandered area of the river.

lines alongside a river but be continued along the same course on the other side of the river, it sometimes may be considered that, in defining the bounds of a riparian proprietor's ownership of the bed of a nonnavigable river out to the thread of the stream, the most practical method, and apparently a legal one, would be simply to continue or prolong the side lines of his property (at least where comprising a governmental section or subsection line) out in their same course from the meander line to the thread of the stream.

The suggested straight extension method, however, seems to have been seldom adopted. On the contrary, several cases will be noted in which the upland division line running to the river seems to have been a section or subsection line of the government survey, but its course was not adhered to in projecting a division line out to the thread of the stream, the projected line being made perpendicular to the thread. See the following cases, none of which discusses the possible effect of the factor that the upland division line running down to the river was such a government survey line: Application of Central Nebraska Public Power & Irrig. Dist. (1940) 138 Neb 742, 295 NW 386, infra, § 8[b]; Menasha Wooden Ware Co. v Lawson (1888) 70 Wis 600, 36 NW 412, supra, § 5[b]; Farris v Bentley (1910) 141 Wis 671, 124 NW 1003, infra, § 8[a].

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As an interesting case construing the terms of a Spanish grant of additional area to the east of an earlier English grant of land fronting on the Mobile River, as requiring that the north and south boundaries of the earlier grant be continued out in the same direction (due east) to the channel of the river, rather than being run in the shortest direct line from the high-water mark to the margin of the channel, see Hagan v Campbell (1838, Ala) 8 Port 9, 33 Am Dec 267, in which the court considered that the terms of the Spanish grant and the lines indicated on the plat which accompanied it were controlling in locating the area over the accretions and bed of the river included within such grant. It appeared that at the time of the Spanish grant the grantee owned (under an earlier British grant to his predecessor) land bounded on the east by the high-water line of the river, and the Spanish grant was construed as confirming the British grant and in addition granting all the land lying east of the original tract to the channel of the river, so that in order to embrace all the intervening soil, the north and south lines of the original tract must run without variation of course from the high-water mark to the margin of the channel.[12]

[b] Instances of acquiescence in extension of side lines in same course.

There are several instances in which a riparian proprietor has been found to have so acquiesced in a division of the river area by direct extention of the upland division lines in their same course into the river that he was bound to adhere to such method of division.

It was held in Stockham v Browning (1867) 18 NJ Eq 390, a dispute between proprietors of two adjoining tracts of land on the Delaware River, that by long-continued acquiescence and acknowledgment the line of division between their holdings from high-water mark down to low-water mark was a direct continuation of the division line of their upland in its same course, and therefore the contention of the defendant that the line should be drawn at right angles to the shore of the river could not be sustained, the court saying that it thought that persons who have for years recognized and acquiesced in a line as separating their

12. A reporter's footnote with this opinion brings out that the case turned upon the express terms of the grant, and did not involve or purport to settle riparian rights questions where there had been no grant of the area in the river below high-water mark.

inchoate and imperfect rights upon the shore should be held bound by such acknowledgment and acquiescence for the same reason that they are held to be bound by them as to lines on upland. And it was further considered that even if the lines should be regarded as not being settled by acquiescence, this defendant could not maintain his position because under any other rules applied in other jurisdictions for the division of such areas between high and low-water mark the division would not be as favorable to the defendant as that made by the continuation of the upland boundary in its same course over the shore area.

Another relevant instance of acquiescence binding a riparian owner to a division of the frontage area in the river in accordance with the lines of a street and various upland division lines extended directly into the river without change of direction, although they met the original shore line at an oblique angle, is found in O'Donnell v Kelsey (1952) 10 NY 412, affg 6 NY Super Ct (4 Sandf) 202, infra, § 14.

And as an instance in which the side-line boundaries of certain lots fronting on the Providence River were held to extend out in their same course to the harbor line because they were so represented upon certain plats and conveyances and had long been acquiesced in by the parties and their predecessors, for which reason the rules for the division of water-front areas in the absence of specification or acquiescence did not control, see Brown v Goddard (1880) 13 RI 76. The court noted that not only were the lines recognized and acquiesced in, but also deeds of grant and partition had been made in accordance with such lines of the plat and on the understanding that they should be observed.

§ 7. Right angle or perpendicular projection methods.

Particularly in connection with the apportionment and division of the appurtenant portion of the river as between riparian tracts fronting on the same bank, where such bank or shore is reasonably straight rather than much curved or irregular, some of the courts have developed, adopted, or applied one or the other of several right-angle or perpendicular projection methods for locating the side divisional lines from the shore out to the terminal line in the river; the only common feature of the several methods being that the direction along which the upland division lines run down to the shore is disregarded and the side lines from the shore out into the water are projected in a direction which is perpendicular to some specific base line. Various base lines (which the respective division side lines are to meet or intersect at right angles) have been specified, including the thread of the stream or river (see § 8, infra), the course of the river (see § 9, infra), the line of the channel (see § 10, infra), the official pierhead line or the bulkhead line or the harbor line (see § 11, infra), and the line of the shore or the general course of such shore line (see § 12, infra).

A statement to the effect that the extension of the side-line boundaries out from the shore must be at a right angle to the shore line or the line of navigable water is found in the related case of Oregon Coal & Nav. Co. v Anderson (1913, CA9 Or) 206 F 404, supra, § 5[a], which involved frontage on an ocean bay not referred to as being a river.

Attention is directed to a case in which the court used the expression "at right angles from the stream." In this Maine case involving the question whether all of certain realty assessed by a town was actually within the territorial limits of such town, one point decided being that the town boundaries extended out to the center line of the Kennebec River, which bounded it on the west, the court had occasion to say that ordinarily, where a stream of water, above the tide, and therefore not technically navigable, constitutes the boundary line of an incorporated territory, the thread of the stream is the true boundary line; and that by implication of law, in the absence of negativing words, the side lines of a riparian proprietor whose estate is bounded by a nonnavigable

river "are extended from the termini on the margin, at right angles from the stream to include one-half of the bed of the river." Shawmut Mfg. Co. v Benton (1923) 123 Me 121, 122 A 49. Just what was intended by the statement "at right angles from the stream" is not made definite by the opinion, and it would seem that in this instance the particular angle of projection out to the thread of the stream was not of importance.

A federal case involving Indiana law, ruling that title to the bed of a natural nonnavigable lake was in the state rather than in the owners of lands abutting on the lake, took occasion to point out, in distinguishing lakes from nonnavigable streams, that nonnavigable streams are usually narrow and the lines of riparian owners "can be extended into them at right angles" without interference or confusion, and without serious injustice; and that it was natural, when such streams were called for as boundaries, to hold that the real line between opposite shore owners was the thread of the current. Indiana v Milk (1882, CC Ind) 11 Biss 197, 11 F 389.

§ 8. — Projection at right angles to thread of stream.

[a] Generally.

It is well known that as between riparian proprietors on opposite sides of a nonnavigable river, the boundary line in the river ordinarily is the center or central line of the river, commonly termed the thread of the stream or the medium filum aquae; and that title to riparian land fronting on a nonnavigable river ordinarily gives the proprietor title to the bed of the river in front of his shore out to the thread of the stream. 56 Am Jur, Waters § 455.

In apportioning and dividing the appurtenant area in a river as between two or more riparian tracts fronting on the same bank, one rule or method adopted by some of the courts (at least as being proper under the particular circumstances involved) has been to run the respective side lines in the river as perpendiculars to the thread of the stream, so that they meet such thread at right angles. This method of running side lines would seem particularly appropriate on nonnavigable rivers wherein the riparian proprietor has title to the river bed out to the thread of the stream, but has also been applied with respect to navigable rivers in some instances.

A Michigan opinion states that in all cases of rivers and other running streams which serve as exterior boundaries, the common law, like the law of nations, recognizes the boundary as the middle of the stream, where there is no other intention manifested; that every proprietor whose rights are not terminated at the shore has a right extending to that central thread, and no one on either side reaches beyond it; that whatever the proprietor's shore lines may be, his exterior line is in the middle of the stream and accordingly no other proprietor can lawfully interpose so as to cut him off from that midstream line. "But," said the court, "any division or boundary that does not take the central thread as a point of departure, will be certain in many cases to exclude the owner from such an extent, and may deprive him of any water rights whatever." Bay City Gaslight Co. v Industrial Works (1873) 28 Mich 182. This opinion also states that where there are large indentations of shallow water on one side of a stream, with no corresponding bends on the other, it would often happen that the owner of a frontage within such a locality would be entirely shut in within its outer points, and that a person holding a large tract, and subdividing it, could hardly fail by any subdivision, if the shore is not perfectly straight and the river of uniform width (two conditions never found in natural streams), to cause serious interferences among the adjacent fronts, whereas, if the bounds are all to be governed by lines drawn at right angles from the thread to the shore termini, as near an approach will be made to an unvarying measurement as is possible under any ordinary circumstances.

Idaho.

See the court's observation in Ulbright v Baslington (1911) 20 Idaho 539, 119 P 292, 294 (overruled on other grounds in Callahan v Price (1915) 26 Idaho 745, 146 P 732), in which the lands involved fronted on a lake, that "the rule with reference to the upland owner projecting the side lines of his premises in a right line to the center of the stream must necessarily receive a modification in the case of a circular lake. A lake has a center and sometimes a center line, but seldom a thread or stream. It is necessary, therefore, that the side lines of riparian and upland proprietors should converge to the center of the lake."[13]

Massachusetts.

See Knight v Wilder (1848) 56 Mass (2 Cush) 199, 48 Am Dec 660, infra, § 9, to the effect that the side lines should extend from the shore, at right angles with the course of the river, to the thread of the stream.

As an instance in which it was considered that the side lines should be extended out from the bank at right angles to the thread of the stream at the ordinary stage of water in dividing tidal flats on Muddy River in Boston, see Tappan v Boston Water Power Co. (1892) 157 Mass 24, 31 NE 703, 16 LRA 353, infra, § 15.

Michigan.

That the division line between adjoining riparian tracts should be run out from the shore so as to strike the thread of the river at right angles seems to be well established by a series of Michigan cases, each of which involved a navigable river, it would appear, although no particular point was made of that circumstance.

Where each of the patents from the United States under which adjacent parcels of land, fronting on the Detroit River, were held, commenced and terminated the description of boundary upon the riverbank, and was silent as to any riparian ownership, the division lines of the respective riparian rights areas in the water out to the thread of the stream were determined by extending lines at right angles from the thread of the stream to the points at which the respective division and side lines of the two riparian owners intersected the bank of the river, without regard to the direction or angle at which the division and side lines on the upland ran, the object being to give each riparian proprietor the same or proportionately the same dimension on the thread of the stream that he had on the shore thereof. Clark v Campau (1869) 19 Mich 325. The official headnote states that the boundary between adjoining riparian owners is to be determined by extending a line from the boundary at the shore, perpendicularly to the general course of the stream opposite that point. See additional exposition of the court's view in this case in § 5[a], supra.[14]

It was held in Bay City Gaslight Co.

13. On the lake area phase of the question, which is excluded from the scope of this annotation, see and contrast with the above case Driesbach v Lynch (1951) 71 Idaho 501, 234 P2d 446, to the effect that littoral rights upon a navigable lake should be divided between adjoining owners by erecting lines perpendicular to the general course of the shore line, where the shore line is straight or substantially straight.

14. In this case the controversy arose over the location by defendants of certain pilings in the river in a position which was within the plaintiff's riparian area if the upland division line between the properties was to be extended in its same course over the water, but which was found actually to be in the defendants' riparian area when the over-the-water division line was extended out from the shore at right angles to the thread of the stream in accordance with the rule which the court held controlled here.

A later case brings out particularly that it was decided in Clark v Campau, supra, that the lines in the water area were to be governed by the course of the stream, and the land bounded by lines drawn at right angles with the central thread; that although it happened in the Campau Case that the shore line followed closely the course of the river, and lines drawn from the shore were practically identical with those drawn from the cen-

[§ 8]

v Industrial Works (1873) 28 Mich 182, that in determining the boundaries of water lots or riparian areas in the waters of Saginaw River in Bay City, the division lines of the respective owners were to be drawn at right angles from the middle thread of the river to the termini of their respective division lines on the shore rather than being drawn at right angles to the shore at their respective points of intersection therewith. The opinion emphasizes that the thread line of the river is controlling rather than the direction of the shore line.

A modern Michigan case involving properties fronting on the Detroit River states that it is well settled in Michigan that the boundary line between two adjoining riparian owners, as to the land covered by water, is not in any way dependent upon the direction of the lines on land, but that the lines from the shore should run, as near as may be, perpendicular to the course of the stream. A. M. Campau Realty Co. v Detroit (1910) 162 Mich 243, 127 NW 365, 139 Am St Rep 555. A plat of the area accompanying this opinion demonstrates the location of the disputed area in the river and the distribution determined upon as between the two adjoining owners of land fronting on the river by applying the rule that the line should be drawn from the shore at right angles to the thread of the stream. The opinion brings up that the trial court had fixed a line which adhered to the line of extension of the plaintiff's dock and was approximately at right angles to the thread of the stream rather than exactly at right angles thereto, but the reviewing court considered that the defendant city had no cause to complain thereof where the result was to give the city slightly more frontage on the mid-line on the thread of the river than it was entitled to and would have been allotted had the line been an exact perpendicular.

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It may be helpful to note that in a case involving determination of the division line in the waters of Green Bay as between adjoining landowners fronting thereon, the Michigan court remarked: "We cannot deal with Green Bay as we could with the rivers in this State, where the lines are to be drawn at right angles to the thread of the stream. The rules laid down for the boundaries of owners of land bordering upon the ocean and great inland seas are more proper for the disposition of the case before us." Blodgett & D. Lumber Co. v Peters (1891) 87 Mich 498, 49 NW 917, 24 Am St Rep 175, in which the court adopted and applied the rule developed by the Massachusetts cases.

The distinction between rivers having a discernible thread and other waters, such as bays or ocean fronts, was also noticed in Bay City Gaslight Co. v Industrial Works (1873) 28 Mich 182, as brought out in § 2, supra.

Nebraska.

For a pertinent case, see Application of Central Nebraska Public Power & Irrig. Dist. (1940) 138 Neb 742, 295 NW 386, infra, § 8[b].

New York.

A New York statute authorized the commissioners of the land office to grant lands under the waters of navigable rivers or lakes, as they should deem necessary to promote the commerce of the state, or proper for the beneficial enjoyment of the same by the adjacent owner, but provided that no such grant should be made to any person other than the proprietor of the adjacent lands. In United States v Ruggles (1861, CC NY) 5 Blatchf 35, F Cas No 16204, the court ruled that this statute was to be construed as intending and requiring that the grant of the water lots thereunder to the adjacent proprietor of the land must be confined to a line starting at the intersection with the shore, and extending at a right angle with the thread of the stream (or at a right angle into the lake) without any regard to the course or direction of the divi-

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tral line of the river, that decision was based upon the principle that the course of the river itself governed, and not the shore. See Bay City Gaslight Co. v Industrial Works (1873) 28 Mich 182, infra.

sion line upon the land. Under this view it was held that a landowner upon the East River, adjoining the land of the federal government known as the Brooklyn Navy Yard, who had obtained from the Commissioners of the State Land Office a deed of the submerged land in front of his property, would be enjoined from constructing docks in the water where such proposed docks would be on the Navy Yard's side of the water boundary when drawn under the rule laid down by the court, although such location of the docks would fall upon the defendant's side of the boundary if it were to be determined by extending the upland division line of the parties over the water area without any variation in its direction. It appeared that the general course of the river at this place was nearly east and west and that the land boundary between the defendant's land and the Navy Yard struck the shore in an oblique direction.

In the Ruggles Case, supra, the court thought that the construction adopted requiring the boundary line to be drawn from the shore at right angles to the thread of the stream was the only construction which would carry the intent and purpose of the statute into effect, for any other rule would operate to permit a grant of underwater land to one riparian proprietor to operate as an interference with the rights of an adjoining riparian proprietor to the river area in front of his property.

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A New York Court of Appeals opinion states that in New York and in most of the other jurisdictions where the common-law rule obtains, the rule has been established that as between adjoining owners on nonnavigable streams and rivers, each owner takes title ad medium filum aquae, in proportion to his line on the margin in front of his upland, according to straight lines drawn at right angles between the side lines of his land on the shore and the center line of the stream. Calkins v Hart (1916) 219 NY 145, 113 NE 785, LRA1917B 783, rearg den 219 NY 626, 114 NE 1061, in which the court held that this rule was properly applied in dividing the submerged bed of a small inland lake which was oval in shape and about two-thirds of a mile long and half as broad, the court saying that this lake was legally a nonnavigable stream, its length was double the width, the shore line practically unbroken by coves or bays, and the lot lines bounding the lake at right angles with the stream; and that a line drawn through the center of the stream north and south (which was the longest diameter of this oval lake) equitably and proportionately would give to each riparian owner an interest to that line in the water or the land thereunder without undue advantage over his neighbor.[15]

The rule of the Calkins Case, supra, was reiterated and applied to another small oval lake, deemed to be legally a nonnavigable stream within such rule, in Mix v Tice (1937) 164 Misc 261, 298 NYS 441.

In connection with these New York cases it should be noted that this annotation generally does not cover the question of apportionment and division as it relates to lakes, its scope being limited to cases involving rivers.

Oklahoma.

Consider in this connection the ruling and language in Rector v United States (1927, CA8 Okla) 20 F2d 845, stated in § 6[a], supra, involving riverbed oil rights. Note particularly the comment made in the footnote appended to that statement of the case.

Oregon.

In Montgomery v Shaver (1901) 40 Or 244, 66 P 923, involving premises fronting on the navigable Willamette River in the former city of East Portland, where the upland division line

15. The trial court's opinion in this case (in 64 Misc 149, 118 NYS 1049, affd 164 App Div 909, 148 NYS 1108, which is affd 219 NY 145, 113 NE 785, LRA1917B 783, rearg den 219 NY 626, 114 NE 1061, stated supra) contains an interesting discussion of the problem as it relates to the drawing of division lines in lakes of various types.

met the river at an acute angle and the dispute was as to the areas in the water in which the respective landowners could construct wharves, the court held that the division line in the water area for wharfage purposes was to be determined, not by extending the upland division line in its same course into the water, but on the contrary, by a line drawn at right angles from the thread of the stream to the shore terminus of the upland division line, the onshore terminus being, under Oregon law, the line of ordinary high water. The court pointed out that the right to wharf to the navigable water was given by statute to any owner of land bordering on such water within the corporate limits of any town or city; that wharfage privileges are valueless unless they extend to navigable water or the ship's channel; but that it often happens that the contour or configuration of a stream is such that, if the dividing line of upland owners bordering on the margin is extended by right lines, the owner on one side thereof will be deprived of access to the ship's channel, and therefore, in order to accord to each shore owner a ratable and equitable proportion of the navigable stream, the rule has been firmly established, as being the most apt and appropriate for the purpose, that the bounds are to be governed by lines drawn at right angles from the thread of the stream to the shore termini, the court adding that the rule was not changed by the fact that the proper authorities had established a wharf line in front, the thread of the stream being the unalterable base from which lines drawn at right angles to the shore termini would determine the area subject to the exercise of the wharfing privilege. It was recognized that there were possible exceptions to the rule, but this case was considered not to fall within any of the exceptions.[16]

The rule of the Montgomery Case, supra, was recognized but considered not appropriate for application to the distinctive situation involved in Columbia Land Co. v Van Dusen Invest. Co. (1907) 50 Or 59, 91 P 469, 11 LRA NS 287, infra, § 11[a], in which the frontage was on a peninsula in the Columbia River and the river was 3 or 4 miles in width.

Wisconsin.

It was conceded by the parties in Menasha Wooden Ware Co. v Lawson (1888) 70 Wis 600, 36 NW 412, supra, § 5[b], that as between two adjoining "government lots" fronting on the Fox River at Menasha, the division line should be run out as a perpendicular to the thread of the stream, the dispute being as to the proper interior starting point for such line.

In connection with its ruling that plaintiff, as the owner of a fractional lot bordering on the north side of the Wisconsin River to which his remote grantor had received a government patent in 1854, was the owner of an island in the river in front of plaintiff's land, where it was proved that such island, as early as 1850 and at all subsequent times, had been located north of the center line of the river, although the island was unsurveyed when the 1854 patent was granted and had subsequently (in 1908) been patented by the government to the defendant, the court in Farris v Bentley (1910) 141 Wis 671, 124 NW 1003, also ruled that the evi-

16. Additionally in this case, with respect to adverse possession, a defendant who had constructed a wharf out from his property and had maintained a small portion of it in the wharfage area properly belonging to the plaintiff as the adjoining riparian landowner and had so occupied the water area of the plaintiff for more than 10 years, was held to have established adverse possession of the water front as against the plaintiff, over the specific area occupied by defendant's wharf and also over the water area from the end of such wharf in front of plaintiff's property out to the thread of the stream on defendant's side of the line drawn at right angles from the thread of the stream to the tip of the wharf, but not as to the remainder of plaintiff's water-front area, defendant's activities in the remainder of such area not having been such as to amount to adverse possession.

dence sufficiently established that the island in question was opposite the plaintiff's land on the north bank of the river and in this connection stated that when the boundaries of the plaintiff's land reached the river, they were to be produced to the center line between the banks (the thread of the stream) not directly north and south, but at right angles with the line of the thread of the stream. Although not definitely so stated, it may be assumed that the lines of the government survey of fractional lot 5 ran true north and south, the court pointing out that such lines were not to be produced into the river area along their upland course but were to be run at right angles to the line of the thread of the stream.

In Superior v Northwestern Fuel Co. (1917) 164 Wis 631, 161 NW 9, an action to establish boundaries and to quiet title to certain land abutting on that part of the St. Louis River commonly known as the Bay of Superior, the court, referring to a certain plat and a descriptive legend therewith which showed that Superior Street (later known as Hill Avenue) extended due north along a section line to the shore line of the Bay of Superior, which it met at about a 45 degree angle, the line of the shore running in a northwesterly-southeasterly direction, stated that under well-established principles of law, the street being dedicated to the shore line of the river, the public became vested with the right to pass over that part of the submerged land lying between the shore and the dock line as established by the United States, and the boundaries of such strip over the submerged land were to be determined by dropping lines at right angles to the thread of the stream to the points where the boundaries of Hill Avenue intercepted the shore of the river. However, it was held that under the particular circumstances the city was estopped from now asserting its rights and the rights of the public to such area from the shore line out to the dock line as against a fuel company which had long occupied such area and had made very extensive improvements thereon in connection with its coal dock facilities.[17]

Stating it to be settled in Wisconsin that a riparian owner on a stream (not a state boundary line) takes to the center of the stream subject to the rights of the public to the use of the stream, that the boundaries of the riparian lot are to be produced to the center of the stream at right angles with the center line, and that the boundaries of the public easement opposite a street end are determined in the same manner, the court in Metropolitan Invest. Co. v Milwaukee (1917) 165 Wis 216, 161 NW 785, held that under these principles a new bascule bridge which the city of Milwaukee was preparing to erect across the Milwaukee River from State Street on the west bank to Martin Street on the east bank, thereby making a somewhat diagonal crossing of the river, would encroach upon the submerged land belonging to plaintiff as the owner of lots situated on the west bank of the river immediately north of State Street, the consequence being that the city was enjoined from proceeding with the construction of the bridge until it had taken the necessary portion of the plaintiff's property by condemnation. A diagram with the opinion illustrates the situation and shows that the bascule bridge was to replace a swinging bridge in the same location and would involve the building of some permanent structures in the bed of the river within plaintiff's bounds and would interfere

17. It appeared that the original plat was made in 1882 but that the city had never opened or improved the street from Bay Street northward to the shore of the bay and that in 1900 the city had accepted and approved a later replat of the area which showed the street as terminating, apparently, at a point short of the then shore line and listed the area from the end of the street out to the dock line as being lot 1 of a certain block of the replat.

On the estoppel question, see annotation treating estoppel of municipality to open or use street, 171 ALR 94, in which the above Wisconsin case is summarized at p 170.

with the value of plaintiff's property for wharfage purposes.

[b] Areas at junction of rivers.

It was recognized by the court in Application of Central Nebraska Public Power & Irrig. Dist. (1940) 138 Neb 712, 295 NW 386, that the boundary line between riparian owners on the same side of the stream runs from the end of the shore line to, and along a line at right angles with, the center line of the stream. However, the question involved was as to the location of the center line of the river at a point immediately below the junction of two rivers (the plaintiffs owning land on the north shore of the Platte River immediately below the junction of the North Platte and the South Platte Rivers), and the court determined that while the plaintiffs, as owners of land on shore of a nonnavigable river, also owned the bed of the river out to the center line thereof, in this situation the controlling center line was to be established by extending the center line of the tributary nearest plaintiff's lands along its original course into the main river to the point where it met the center line of the other tributary likewise extended into the main river, plaintiff's riparian area being limited to the river-bed land between plaintiff's shore line and the center line of the North Platte River as so extended and thence easterly along the center line of the Platte River from such point of intersection of the extended center lines of the two tributaries; and that the triangular area between the center lines of the two tributaries (eastwardly to their point of intersection in the main river) was riparian to the owner of the land lying within the angle or the junction of the two tributaries. This ruling was made in proceedings to obtain compensation for land taken under eminent domain. A plat of the area involved appears in the opinion and is helpful in understanding the situation. There seems to have been no question as to the proper angle of extension of the side boundary into the riparian area (once the controlling thread of the river was located), and it may be noted that the plat indicates that such boundary was extended at a materially different angle from that at which the upland boundary met the shore.

A syllabus by the court in the foregoing Nebraska case states that where two tributary streams meet and form one stream, the center lines of the streams of the two tributaries are extended until those lines meet and form the center line of the main stream. In the absence of restrictions in the grants, such lines then become the boundary lines of the lands on either side of, between and immediately below the point of the confluence of the two streams.

§ 9. — Projection at right angles to course of river.

In some cases courts have considered that the divisional side lines from the shore out into the river area should be projected at right angles to the "course of the river." This somewhat indefinite term seems for the most part to have been used as meaning the same thing as the thread of the stream or river, that is, the medium filum aquae. The cases in this group should be read in connection with those in § 8, supra, in which the thread of the stream was specifically designated as the line to which the side lines were to be perpendiculars.

Massachusetts.

The Massachusetts court has laid down and applied the rule that in determining the course of the division line as between adjoining riparian owners from the shore out to the thread of a nonnavigable river, when there is nothing in the conveyance to establish some other line, the rule is that the side lines of each riparian proprietor must extend from the termini of his lines on the shore, at right angles with the course of the river, to the thread of the stream, the court saying that prima facie the general rule must be to take lines at right angles with the course of the stream, to its thread or middle line. Knight v Wilder (1848) 56 Mass (2 Cush) 199, 48 Am Dec 660. The court said that it thought this rule was well founded

in principle, the object being to give to each riparian proprietor an equal share of the bed of the river, in proportion to his line on the margin of the stream, together with that portion of the bed of the stream, which lies opposite, in front of, or adjacent to, his upland, and that this object, in the absence of any controlling grant, would be effected by the straight lines at right angles, which would in general be the shortest and most direct lines, to the thread of the stream, and the court added that it could not perceive how this consideration could be influenced by the shape of the upland lot, or by the direction of its side lines back from the river.[18]

Michigan.

An official headnote in Clark v Campau (1869) 19 Mich 325 states that the boundary between adjoining riparian owners is to be determined by extending a line from the boundary at the shore, perpendicular to the general course of the stream opposite that point. The opinion is clearly to the effect that the line is to be a perpendicular to the thread of the stream. This case is stated in §§ 5[a] and 8 [a], supra.

And a more recent Michigan case appears to have used the terms "course of the stream" and "thread of the stream" interchangeably in ruling on the present question. See A. M. Campau Realty Co. v Detroit (1910) 162 Mich 243, 127 NW 365, 139 Am St Rep 555, supra, § 8[a].

Pennsylvania.

Where the survey and patent of the land in question described it as beginning at a certain corner hickory standing on the bank of the Ohio River, thence by a named manor line outward, then returning "to a corner ironwood tree standing on the bank of said Ohio River, thence up the river 233 perches to the first-mentioned hickory, the place of beginning," and subsequent deeds and leases conveyed the land and portions of it by descriptions of the same nature and it appeared that the easterly or manor line of plaintiff's tract struck the river at about right angles, but that the westerly upland division line ran at such an oblique angle that if carried out in the same course from the bank to the low-water mark it would almost intersect the manor line similarly extended, with the effect of practically depriving the plaintiff of any frontage on the water at low-water mark, it was held in Wood v Appal (1869) 63 Pa 210, that by the description in the patent the land granted was bounded on the north by the Ohio River and the grantee's title on such a navigable river extended out from the line surveyed along the bank to low-water mark, and it was further held that in extending the side lines of the tract they should not be continued in the same compass course at which they reached the bank, but instead, were to be extended from the points on the bank directly to the stream and at right angles to it so that each line on leaving the riverbank would run over the shore by the most direct and shortest route to the low-water line of the river.[19] The court said that the serpentine course of the

18. This case involved a dispute over title to that portion of a river bed in which the foundations of a mill dam were located. The plaintiff, who prevailed, contended that the dividing line into the river bed should be run so as to intersect the thread of the stream at right angles, whereas the defendant contended that the upland division line should be extended out to the thread of the river without change of course. The ruling that the division line should be drawn at right angles to the course of the river would seem to mean that it should be at right angles to the course of the thread of the stream.

19. The court observed that the practice of surveyors, in coming to a stream, is to stop upon its bank or margin, at the nearest convenient approach to the stream, and there to mark the corner, indicating where the line strikes the stream, this being necessary to preserve the monuments of survey, as well as for convenience in making it; that when the surveyor, running in toward the river, stops on its bank and makes his corner, he

stream or its relative distances from the bank at different points could make no serious difference as to the line of approach to the water's edge; that, starting from the bank, a direct course to the stream or at right angles to the stream must always afford the shortest and most certain boundary of river frontage and was the rule to be applied in cases where no other intention was disclosed by the return of survey or the deed.

However, a later Pennsylvania case has expressed important limitations restricting the doctrine laid down in Wood v Appal, supra.[20]

§ 10. — Projection at right angles to line of channel.

A few cases have considered that (at least under the particular circumstances involved) the division line should be drawn as a perpendicular to the line or general course of the channel.

A Florida statute enacted in 1856 granted to the riparian owners of lands upon any navigable stream, or bay of the sea, or harbor, as far as the edge of the channel, certain rights, including the right of wharfing out, and the right to prevent encroachments of any other person "upon all such submerged land in the direction of their lines continued to the channel." A riparian owner of lands upon a navigable stream (the St. Johns River) brought suit to prevent defendants from interfering with certain wooden pilings which complainant was maintaining in the river allegedly within its boundaries in the river area, but the court considered that the allegations of the bill of complaint did not suffice to show that the pilings and the encroachments complained of were

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means, in the absence of other evidence found in his return, to indicate his nearest convenient approach to the stream and thus to mark where his line strikes it and the river front it gives to the owner of the survey, whereas, if the surveyor intended to continue his line by the same compass course to the water's edge, one would expect to find something in his return to indicate such intent. Stating that the very fact that the surveyor runs a line along the stream from the end of one line to the end of the other line, where it reaches the bank, is evidence that he does not intend to continue his line to an apex on the shore, otherwise he would have returned no such intermediate line, the court said that here it was hardly supposable that the surveyor intended the oblique line of the upland division to run to an apex on the shore with the manor line, and thereby cut off the owner of the survey from all the river front in low water.

20. In Kreiter v Bigler (1882) 101 Pa 94, which directly involved the extension of division lines of abutting property out to the center line of an abandoned turnpike rather than the division of river frontage areas, it was said that the statement in Wood v Appal that to start from the bank on a line perpendicular to or at right angles with the stream is the proper method of determining the river frontage must be taken as made with reference exclusively to the character of the survey then before the court, which was one in which the side lines of the survey were converging, so that if carried out in the same course they would have met or practically met at an apex before reaching the low-water line, the court saying that it was obvious that the rule of the Appal Case applies only where the lines of the survey either converge or diverge, for where they are parallel a simple extension of them from the bank to the water would, under ordinary circumstances, secure the proper frontage and such, said the court, would seem to be the interpretation given in Ball v Slack (1837) 2 Whart 508, 30 Am Dec 278, to an act of 1809 regulating riparian rights on the Delaware River. "We think," the court said, "the better statement of the rule to be that the owner of land on the bank of a navigable stream is entitled to claim to low-water mark, by lines running directly from his extreme bank marks, if any such he has, to the beach, and this without regard to the courses of the side lines of his survey. It is obvious, however, that even this rule cannot be applied to all cases; and we must, after all, have regard to the circumstances of each particular case, rather than to any unbending rule of law."

upon submerged land "in front of" the complainant's shore line or between lines "running at right angles from the ends of complainant's shore line to the edge of the channel," the court apparently considering that in determining the boundaries of the water area as between two adjoining riparian proprietors on a navigable river, the boundary line should not continue into the river along the same course as the dividing line on the land between the two proprietors but on the contrary, should extend from the shore over a line drawn at right angles to the channel. Merrill-Stevens Co. v Durkee (1911) 62 Fla 549, 57 So 428, affirming a decree sustaining a demurrer to the complaint.

And see, as possibly indicative of the same view, Holland v Ft. Pierce Financing & Constr. Co. (1946) 157 Fla 649, 27 So 2d 76, not directly mentioning side-line boundaries but concerned with an upland owner's title to land created by filling in from the old shore out to the bulkhead line in a navigable river. The opinion pointed out that the Riparian Act of 1921 vested in the riparian owner, that is, the owner of upland extending to high-water mark on any navigable stream, bay of the sea, or harbor, title to the submerged area from the high-water mark in the direction of but only to the edge of the channel, but the title thus vested is a qualified one, which will become absolute when and if the upland owner shall actually bulkhead and fill in from the shore.

But compare the interpretation of a later Florida statute found in Hayes v Bowman (1957, Fla) 91 So 2d 795, infra, § 13, under which a somewhat different view would seem to prevail in this state.

In a Rhode Island case where two tracts of land fronted upon a navigable portion of the Seekonk River in Pawtucket, with a public street running to the river front between such tracts, and the question was as to the division lines from the shore out to the channel within which the defendant could construct a wharf without encroaching upon the water-front area of the plaintiff, and there were irregularities in the shore line, there being a rather deep inward curve along a portion of the shore front of the plaintiff while the shore of the defendant conformed more nearly to the course of the river, the court concluded that a satisfactory rule to be applied under these particular circumstances was to draw a line along the main channel in the direction of the general course of the current in front of the two estates, and from the line so drawn, and at right angles with it, draw a line to meet the original division line on the shore, the court expressly rejecting the theory that the division line on the shore should be continued in its same course out into the river and also considering that under the circumstances, in view of the irregularities of the shore, it would be improper to divide the water-front area by drawing a front line from headland to headland and then drawing the division line so as to give to each set of proprietors a length of front line proportionate to the length of their original shore, since in the situation here presented the division line so drawn would be inequitable to the defendant. Thornton v Grant (1873) 10 RI 477, 14 Am Rep 701.

Note that by a dissenting opinion in Councilman v Le Compte (1941, 179 Md 427, 21 A2d 535, infra, § 16, it was considered that the method adopted in Thornton v Grant (RI) supra, was the proper method to apply in the situation at bar in drawing a division line between adjoining riparian rights areas for the purpose of fixing the permissible location of duck-hunting blinds in the river, within the requirements of a statute, but that the majority of the Maryland court did not agree with this view.

§ 11. — Projection at right angles to pierhead, bulkhead, or harbor line.

[a] Generally.

Where the riparian tracts involved front on a navigable river in a region in which some appropriate governmental agency or authority has established an official bulkhead line, or pierhead line, or harbor line out in the

river, designating the limits out to which improvements may be made or wharfage rights, etc., exercised by those fronting on the river, some courts have found it to be appropriate, in apportioning the river area and drawing division lines therein as between riparian tracts fronting on the same bank, to rule that the respective divisional side lines should be run out into the river so as to be perpendicular to such officially prescribed outer line extending along the river.

Just which official outer line should be taken as the base has varied in different cases, dependent largely upon the local situation and circumstances involved. It seems appropriate, in this section, to review the specific cases by jurisdictions without attempting to group them in accordance with the particular base line utilized.

Contrast, with the cases in this section, the view taken in Lambert's Point Co. v Norfolk & W. R. Co. (1912) 113 Va 270, 74 SE 156, infra, §§ 12, 14, to the effect that where the shore base line and the port warden's line out in a navigable river were not parallel, the division line should be drawn, not at right angles with the port warden's line, but (apparently) as nearly as practicable at right angles to the shore base line.

As an instance of estoppel to assert a right to extend lines out from the original shore at right angles to a pierhead base line, see O'Donnell v Kelsey (1852) 10 NY 412, infra, § 14.

Oregon.

For the purpose of establishing a line of division between adjoining tracts of land fronting on the south shore of the Columbia River in the region of certain platted towns (Astoria and Alderbrook), where it appeared that the river was some 3 or 4 miles wide in that vicinity and that the towns in question were laid out on a peninsula, and the river area could not properly be regarded as being a cove, and it further appeared that the government had established a pierhead line running in a straight course in front of the respective properties, the court, deeming it impracticable in this situation to take the current of the stream as the basis for determining the division line, ruled that the division lines in the water area should be drawn at right angles from the government pierhead line (which was regarded as being the line of navigable water) to the point where the upland division line between the respective parties reached the shore. Columbia Land Co. v Van Dusen Invest. Co. (1907) 50 Or 59, 91 P 169, 11 LRA NS 287. The court pointed out that the situation dealt with was entirely different from that presented in Montgomery v Shaver (1901) 40 Or 214, 66 P 923, supra, § 8 [a], and the rule applied would not conflict with the rule of that case, the situation at hand being one in which the line of deepwater frontage should be the basis of apportionment, as in the case of water frontage in lakes and tidewater. But note that because the parties to this case had previously jointly conveyed a portion of their combined frontage out to the pierhead line to a third person by a line specified as being upon a certain compass course, the effect was that the division line between the present parties was fixed as a line running from the shore perpendicular to the pierhead line out to the point of intersection with the compass course line in the prior conveyance, but following such compass course from that point of intersection out to the pierhead line.

The fact, noted in the statement of the foregoing Oregon case, that there was an angle in the river area side line at one point in its course from the shore to the outer line in the river, is quite distinctive. See remarks in § 4, supra.

Rhode Island.

In Aborn v Smith (1879) 12 RI 370, a suit between the owners of two adjoining estates fronting on the west bank of the Providence River, it was held that under the circumstances involved, which included the fact that there had been established in 1855, out in the river in front of the parties' lands and in front of many other riverfront properties in the area, a harbor line which was perfectly straight in

this region although at a point farther down the river it turned outward at a slight angle and terminated near the base of a projecting headland (which made a deep elbow in the shore in which there was an irregular cove or inlet), and the fact that the portion of the shore belonging to the complainants was somewhat curved and therefore elongated, and the further fact that many other river-front owners in this area had filled in and otherwise improved their properties out to the harbor line, the division line from the shore out to the harbor line, as between the two parties in this suit, was to be drawn by running out a line from the shore end of the upland division line so as to intersect the harbor line at right angles, the court considering that it would not do, under the circumstances presented, to give each owner a portion of the harbor line strictly proportionate to the length of his shore line, for that would be inequitable here and would require adjustment of division lines as to numerous other property owners on the river front who were not parties to the suit. Emphasizing that the problem presented was one of the definition of water fronts in regard to a harbor line, not one of dividing flats or alluvion, and that as the court had held, the establishment of a harbor line amounted to an implied permission to the riparian proprietors to fill out to it, the court said that the implied permission was to be construed as one to fill straight out to the harbor line so that each owner would occupy the part of the harbor line which was abreast his own land. Observing that there might be exceptional cases where the shore or the harbor line was so peculiar that permission to fill straight out could not be implied, the court concluded that this was not such an exceptional case and that inasmuch as so many of the fronts had been filled, it would be impracticable now to allow a variation which would affect the apportionment along the whole harbor line, even if originally it would have been right and expedient to adopt some method other than filling straight out.

And it was pointed out in the Aborn Case supra, that the rule applied, to wit, that where there was an established harbor line running straight along the river in front of the properties in question and the property owners had implied permission to fill in and improve their lands out to the harbor line, the fill ordinarily should be made within lines running straight out from the shore so as to intersect the harbor line at right angles, had the great recommendation of simplicity of application.

In Manchester v Point Street Iron Works (1881) 13 RI 355, involving the dividing line between adjoining proprietors over land which one proprietor had filled in out to the harbor line of the Providence River, the case was held to be one for the application of the rule laid down in Aborn v Smith, supra, under which the dividing line was to be drawn from the point where the dividing line of the upland meets the shore, perpendicularly to the harbor line, the defendant failing to establish that a different line had been established by acquiescence or otherwise.

In Taber v Hall (1902) 23 RI 613, 51 A 432, involving lands fronting on the Providence River, the court reaffirmed and applied the rule laid down in Aborn v Smith (1879) 12 RI 370, to the effect that, where the line had not been settled by the parties themselves, such lines should be drawn from the shore end of the dividing line of the upland to the harbor line, so as to intersect the harbor line at right angles.

[b] Instance of estoppel.

In Baltimore v Crown Cork & Seal Co. (1941, CA4 Md) 122 F2d 385, modg Mutual Chemical Co. v Baltimore (DC Md) 33 F Supp 881, involving division lines bounding the riparian rights areas of the owners of lands fronting on the northeast shore of the Patapsco River in Baltimore Harbor in the region of the municipal airport,[1]

1. The opinion (122 F2d 385) sets forth a plat of the area, showing not

[§ 11]

the court held that the power given to the city by the provisions of the Baltimore City Charter, 1938, included the power to establish divisional lines between adjoining landowners in the waters of the river; that although the division line from the shore out to the pierhead line as between the municipal airport property of the city and the adjacent property immediately to the south thereof owned by the Mutual Chemical Company had not been officially established by action of the city, nevertheless, under the circumstances, the city was estopped from asserting, as against the Mutual Chemical Company, that it had never officially adopted a plan of division known as the Hammond plan, made in 1928, by which the division line as between the airport and the Mutual Chemical Company property was shown as extending from the then shore out into the river by a line drawn at right angles to the pierhead line, and the city could not now contend that the division line out to the pierhead line should be drawn by projecting the overland division line between these properties on its same course out to the pierhead line, which it intersected at an angle at a point considerably south of the line drawn perpendicular to the pierhead line.

In Baltimore v Crown Cork & Seal Co. (F) supra, the circumstances giving rise to the estoppel included the fact that after the Chemical Company had made some improvements out from the shore within the lines of the upland boundary lines of its property extended in their same course into the river, the city, in acquiring the property adjoining on the north for an airport, promulgated the so-called Hammond plan, prepared by its harbor engineer, which showed the division lines between the several properties along this area of the river as extending out from the shore so as to intersect the pierhead line at right angles thereto; that while the city never by ordinance officially adopted the Hammond plan, it had in various ways treated it as being the official plan, and its harbor engineer had informed officials of the Chemical Company that they could not construct improvements and fill out into the river within the lines of their upland boundary lines as extended in the same course, but must adhere to the lines of the Hammond plan, and thereafter the Chemical Company, operating under permits obtained from the city, had in fact filled in a considerable area in front of its premises within the lines prescribed by the Hammond plan. However, while owners of several other properties along the river to the south of the Chemical Company's property were also parties to the action, it appeared that none of them had filled out into the river or constructed improvements therein, so that the city was not estopped to abandon or change the lines of the Hammond plan as to them, and the court concluded that, inasmuch as the city possessed legislative power to prescribe the division lines in the riparian areas along this section of the river, nevertheless, since it had not exercised that power and had not officially prescribed such lines, and was not estopped as to those property owners who had made no improvements in the water with which the location of the city's airport would interfere, it was improper for the court below to confirm in toto the divisional lines of the Hammond plan respecting all of the property in the area; the Court of Appeals concluding that in this situation, as to those property owners who could not claim an estoppel against the city, the settlement of the divisional lines between the properties must await the action of the city, and resort to the courts would not be permissible unless the city should refuse to act or acted in such a manner as amounted to an abuse of power.

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only the airport and the chemical company's adjoining premises, but also a number of additional tracts of land with the riparian rights areas thereof as designated by the so-called Hammond plan.

§ 12. — Projection at right angles to line of shore or general course thereof.

Particularly with respect to navigable rivers where access to the line of navigable water or the improvement or utilization of the frontage area in the river for wharfage or other purposes connected with navigation are important factors, the courts, in several instances, have ruled that as between adjoining riparian tracts fronting on the river the division lines should be projected out into the river at right angles from the line of the shore or from a base line representing the general line of the shore along the front of the tracts involved.

It seems that this method has more generally been pursued where the shore line was relatively straight and that it would not be considered equitable or appropriate where the shore or river is so curving that application of this method would cut off any of the riparian tracts from access to and a reasonable extended frontage upon the line of deep water or other limiting line out in the river.

Attention is called to a statement found in a federal case involving frontage on an ocean bay in Oregon to the effect that the extension of the side-line boundaries out from the shore must be at a right angle to the shore line or the line of navigable water. Oregon Coal & Nav. Co. v Anderson (1913, CA9 Or) 206 F 404, supra, § 5 [a].

California.

A California case involving ocean-front property states that under the law it is not true that the rights of adjoining owners of land bordering upon tidewater, or upon a navigable lake or stream, in the land under the water upon which both tracts abut, are to be ascertained by extending the line of the boundary between them in its orignal direction into the water, to the center thereof in the case of a stream, or indefinitely in the case of the ocean. On the contrary, said the court, the rule is that the area over which such rights as each proprietor may have in the land under the water upon which his tract abuts, and to the use of the water covering the same, is fixed by a line drawn into the water perpendicular to the shore line, meaning the general course of the shore line at that point; and unless extraordinary conditions occur, this is the rule to be applied in defining the respective rights of such owners to the space in front, under, upon, and in the water. Fraser's Million Dollar Pier Co. v Ocean Park Pier Co. (1921) 185 Cal 464, 197 P 328, applicability of statements limited in per curiam opinion in 198 P 212.[2]

Louisiana.

Where the boundary line between the first municipality of the city of New Orleans and the second municipality of that city ran to the edge of the Mississippi River, which it met at an oblique angle, but did not extend into the river, and the first municipality had commenced construction of a wharf starting on its side of the line but running out into the river at an oblique angle corresponding to the division line on the land, so that it extended somewhat upstream into the river and as so located would cut off and interfere with the use of a wharf already built on its side of the boundary by the second municipality, the court held that the direction of

2. This case was somewhat concerned with the bounds of municipal jurisdiction over waters of the ocean and whether a certain pier built out into the ocean by a private owner was fully within the jurisdictional limits of the city of Santa Monica or partly within the limits of the city of Venice. The per curiam in 198 P 212, states that the discussion concerning the common-law rule on the subject of the direction of the extension of boundary lines into streams, etc., as between adjoining landowners, was based wholly upon the facts shown in the record and it was not intended to construe the terms of the Santa Monica charter nor to determine whether the boundaries of the cities extended into the ocean.

wharves in the river was not controlled by the line of the land boundaries between the two municipalities and that the wharves must be constructed out into the river at right angles to the line of the shore (designated as the line of the levee), thereby effectuating an equitable division of the wharfage area as between the several municipalities lying along the curve of the river, and consequently the wharf which the first municipality was constructing at the improper angle bringing it in front of the wharf and landing place of the second municipality must be demolished. Municipality No. 2 v Municipality No. 1 (1841) 17 La 573. The court pointed out that at New Orleans there were three municipalities stretching along the curve of the river and in this situation a system of wharfage should be adopted which would make every part of the bank accessible, if possible, and not permit one of the municipalities to obstruct the others' rights in the river area, each municipality having the duty of constructing and maintaining its facilities in such a manner as not to interfere with rights or duties of the others; and the court said that the only reasonable method of solving such a problem was to construct all the wharves at right angles to the levee. This, the court said, would make the wharves all converge more or less to a common center through the whole extent of the curvature of the bank and was the system adopted by the city authorities before the division of the city into municipalities as best suiting the interests of commerce and facilitating navigation and as being most economical for the city, and the court said that no good reason had been given why that plan should be abandoned.

Maryland.

A Maryland case states that the right of riparian owners to wharf out to the deep water line must be exercised within side lines at right angles to a straight shore, or if the shore be concave, "within converging side lines which proportionately divide the tidewater shore among such owners." But it was added that this was not the question before the court, the instant question being the respective rights of riparian owners, who had already wharfed out to the navigable water, to use the portion of such waters lying in front of their wharves, a right which, the court said, must be exercised and enjoyed with due regard to the rights of others similarly situated to use the same waters. See Baltimore v Baltimore & P. S. B. Co. (1906) 104 Md 485, 65 A 353, involving certain rights in wharves and riparian areas in the waters of the basin of Baltimore Harbor in the neighborhood of Pratt Street and Light Street and the distribution of damages for the condemnation of properties in that area by an agency of the city. The case also considered the effect of various wharfage permits granted by the city authorities.

New Jersey.

In New Jersey a statute provided that it should be lawful for the owner of land situated along or upon tidewaters, to build docks or wharves upon the shore in front of his lands, and in other ways to improve the same; and when so built upon or improved, to appropriate the same to his own exclusive use. Emphasizing that the statute authorized such extensions and constructions "in front of" the riparian owner's lands, the court in Delaware, L. & W. R. Co. v Hannon (1875) 37 NJL 276, held that where the shore line was relatively straight, the side lines within which a riparian owner of land on a tidal river (the Passaic) could extend his front into tidewater by docking out were to be determined by ascertaining the original high-water mark on the shore, drawing a base line along it conforming to its general course, without regard to small irregularities, and extending the respective side lines into the river area at right angles to such base line, the side lines commencing at the points at which the upland division lines struck the shore base line but being in no wise dependent upon the direction at which such upland lines intersected

the shore. The court said that this rule inevitably resulted from the fact that the right of reclamation was altogether the creature of a statute, the riparian owner having no control over such right, which was an incident which the law itself annexed to the property, and that the right of riparian extension was not at all controlled by the direction in which the upland division lines approached the shore line. And it was emphasized that the statute gave the right of extension into the water area to all riparian owners and that it necessarily followed that no particular proprietor could exercise his privilege of extending his land into the water area except in harmony with the equal rights of the rest of his class, and the only way that equality could be preserved, where the shore line was straight or relatively so, was to extend the side lines into the water area at right angles to the shore base line. The opinion also discusses the problem which arises where the shore line is not straight and there is not a sufficient scope of water front to give to each owner his full share, in which case their respective rights must be conciliated by an equitable adjustment which can be accomplished only by allotting to each landowner an allotment of the water front, proportionable to the extent of his riparian proprietorship. The court said that the principle to work by is that when practicable, each owner is to have his full shore front; when this is not practicable, he is to have his ratable part of such front.

In Manufacturers' Land & Improv. Co. v Board of Commerce & Navigation (1923) 98 NJL 638, 121 A 337, affd on op below in 101 NJL 224, 127 A 924, a controversy between the proprietors of adjoining riparian lands on the Delaware River in Camden in which the prosecutor attacked the propriety of certain proposed riparian grants to be made by the state board of commerce and navigation to one defendant, which would give it an area in the river out to a new pier line, as unlawfully including land actually in front of the prosecutor's riparian tract in the sense intended by the statutes relating to riparian rights, the court, sustaining the prosecutor's contention and ruling that the proposed grant was improperly located and that the resolution of the board calling for the issue of such grant would be set aside, stated (in a syllabus) that the established rule in relation to side lines of riparian grants, founded on Delaware, L. & W. R. Co. v Hannon (1875) 37 NJL 276, supra, that where the water front is practically straight, such side lines are to run at right angles to it, and if curved, then in such manner as to divide the foreshore ratably among the littoral owners, is not to be disregarded or modified merely because a riparian owner has seen fit to subdivide his land and sell it in parcels whose side lines do not run down to the shore at right angles thereto.

There is a statement in Bradley v McPherson (1904, NJ Eq) 58 A 105, that the right to a riparian grant, like the right to wharf out, must be exercised by keeping within side lines, at right angles with the high-water line, if that is straight, and if the high-water line is curved or irregular, then within side lines which divide the foreshore proportionately among the littoral owners. However, this case involved lands fronting upon the Atlantic Ocean, or an inlet thereof, at Atlantic City and is not strictly within the scope of this annotation.

New York.

In People ex rel. Cornwall v Woodruff (1898) 30 App Div 43, 51 NYS 515, affd on op below in 157 NY 709, 53 NE 1129, in which the adjoining properties lay upon the south shore of the St. Lawrence River and alongside a small cove about 100 feet in depth running southerly from the river between the respective properties, and relator had built a dock along the front of his property facing the channel of the river and extended such dock down into the cove, but defendants who owned on the east side of the cove had obtained a grant from the commissioners of the land office of lands under water adjacent to their property and

were planning to fill in such land, including a portion of the waters of the cove, and build a dock along the river shore partially across the original entrance to the cove, the court, over the objection that such procedure would cut off relator's access to his dock in the cove, considered that in determining how the grants of underwater land adjacent to their property should be divided between these owners, the same principles applied as would govern the division between riparian proprietors of lands formed by alluvion, and by that test, the land involved should be apportioned between the two adjacent proprietors in proportion to their frontage upon the main channel of the river measured in a practically straight line and not as such line or frontage would be extended by following the shore line of the indentation or cove, and the line of division should be run out perpendicular to the general line of the shore. Considering that by the grant as made the relator had received all that he was entitled to, and that although his use of the dock in the cove would be somewhat interfered with, the evidence showed that he would still be able to land coal boats at his dock upon the river side of his property, the court concluded that the grant of the underwater land to the defendant owning to the east of the relator was proper and would not be interfered with.

The Woodruff Case, supra, also involved the fact that the relator had previously received a grant from the commissioners of the land office for lands under the water adjacent to his property and had long acquiesced in that grant and a grant made at the same time to the adjoining riparian proprietors covering underwater land immediately east of that granted to the relator. In this connection a headnote to the case (30 App Div 43) states that a riparian owner who receives a patent from the commissioners of the land office for lands under the waters of a cove in the St. Lawrence River takes it subject to the power of the state to grant to the adjoining riparian proprietors the same rights and privileges to the lands under the remaining waters of the cove, by erecting a dock thereon the first patentee cannot deprive the adjacent owners of any of their rights as owners of the uplands, among which is the right to apply for and receive grants of land under the waters adjacent to their uplands.

As an instance of estoppel to assert a right to extend lines out from the shore at right angles thereto, see O'Donnell v Kelsey (1852) 10 NY 412, infra, § 14.

North Carolina.

In O'Neal v Rollinson (1937) 212 NC 83, 192 SE 688, where plaintiffs and the defendants were the owners of adjacent tracts of land abutting on a navigable stream which was a portion of the Albemarle Sound and the dividing line between their respective properties struck the shore at something other than a right angle, it was held that the area of riparian ownership between such parties was to be determined by drawing parallel lines from their respective property lines at right angles or perpendicular to the shore line, extending out directly to the edge of deep water or the channel, and that plaintiffs were entitled to a mandatory injunction requiring defendants to remove that portion of a wharf constructed by defendants which extended into the plaintiffs' riparian area as determined by drawing the division line at right angles to the line of the shore. The contention that the upland division line between the two properties should be continued in its same course over the water area was rejected, the court saying that a protraction of the side lines of an abutting tract of land in the same course in which they run to the shore line might, and could, entirely deprive another owner from access to deep water or the channel. Quoting authorities to the effect that the course of the division line in the water area is not determined by the course of the division line over the upland, the court said that the "right angle" principle applied to the facts in the instant case appeared to be reasonable.

The O'Neal Case, supra, apparently distinguishes Bond v Wool (1890) 107 NC 139, 12 SE 281, supra, § 6[a], as being one in which the upland division lines met the shore line at right angles.

Ohio.

In Ludwig v Overly (1895) 19 Ohio CC 709, 6 Ohio CD 690, involving a dispute as to title to a stone quarry located in the bed of the Maumee River, near the village of Providence, where the river ran upon an easterly course curving somewhat to the south as it passed plaintiffs' land abutting on the north shore and a tract of defendants' land fronting on the north shore to the west of plaintiffs' land (with a small area of shore line owned by the state of Ohio intervening), the court, in determining how plaintiffs' riparian area boundary was to be extended out to the thread of the stream, said that it understood the rule to be clearly established that in order to find plaintiffs' western boundary, the court should draw a line, starting from the point where the line of the land reached the stream, and running at right angles with a base line that should be drawn from the point where the east line of plaintiffs' land touches the river to the point where the west line touches it and corresponding to the general trend of the river. It was concluded that the point of the quarry in question was located within the bounds of plaintiffs' riparian area in the river bed and that defendants, who owned not only land on the north shore westerly of plaintiffs' land but also an island lying in the river and apparently extending in front of lands of both parties, would be restrained from quarrying within the plaintiffs' river-bed area. The opinion in this case is somewhat confusing in that it was also concerned with the division of the river area as between opposite riparian owners, defendants, as noted, being the owners of the island as well as certain land on the north shore and plaintiffs being owners of land on the north shore to the east of defendants' land, with a small tract of land owned by the state of Ohio intervening between the respective tracts of the parties.

Pennsylvania.

Consider in this connection Wood v Appal (1869) 63 Pa 210 and the limitation thereof expressed in Kreiter v Bigler (1882) 101 Pa 94, each reviewed in § 9, supra, relative to the manner of drawing division lines from the ends of the upland survey lines on the riverbank out to the low-water line of a navigable river. The Wood Case ruled that the division line should be run at right angles to the stream, so that such line would run across the shore by the most direct and shortest route to the low-water line of the river. The Kreiter Case (not actually involving a river) suggests that the line should run directly from the extreme bank mark of the survey to the beach.

South Carolina.

In McCullough v Wall (1850) 38 SCL (4 Rich) 68, 53 Am Dec 715, a headnote appearing in 4 Rich L, states: "The extent of a riparian proprietor's ownership in a river is measured by lines perpendicular to the bank, without regard to the course in which the lines of his tract run to the river." The opinion, however, does not make this point in so many words nor does it seem, on its facts, to have actually involved the direction in which the side lines were to be run out to the thread of the river. From the report of the judge in the court below, reported with the opinion, it appears that the rock, title to which was in question and which defendant had used as a fishing station, was located in the Catawba River, between Hill Island and the western bank of the river; that plaintiff claimed the rock as part of his tract of land lying on the west side of the river, "mainly above the rock"; and the principal question involved was whether the rock lay upon plaintiff's side of the thread of the river. The report brings out that the rock was on the plaintiff's side of his southerly boundary if that boundary were extended out to the island in the same course which it occupied on the upland, and that a

line drawn from the rock, perpendicular to the bank, would strike the plaintiff's upland tract.

Virginia.

In Lambert's Point Co. v Norfolk & W. R. Co. (1912) 113 Va 270, 74 SE 156, where the question was how the division line from the shore out to the port warden's line in a navigable river having no defined stream running in a confined and continuous bed should be run as between two extensive riparian tracts having a combined frontage of about 2 miles along the river, the court took the shore line as the base line and projected the division line from the shore out to the port warden's line, the opinion indicating but not definitely stating that the division line was to run as nearly as practicable at right angles to the shore base line. It was considered that where the port warden's line and the shore line were not parallel, it would not be proper to extend the division line at right angles from the port warden's line to the shore, the court saying that the port warden's line establishes the line of navigability and shows how far into the watercourse the riparian owner may improve his property but such line can ordinarily have no effect in the determination of the boundaries of the riparian owners as between themselves. And the opinion rather definitely indicates that in drawing the division lines into the waters of a navigable river such as this one, having no defined stream running in a confined and continuous bed, the rule of division would be different than that ordinarily applying to nonnavigable rivers having a definite thread or middle line. This case is also treated in § 14, infra.

§ 13. Projection as nearly as practicable in the direction of the channel.

One of the most instructive opinions on the present subject is found in Hayes v Bowman (1957, Fla) 91 So 2d 795, which involved riparian rights in the tidal waters of Boca Ciega Bay. Although not directly involving a river, the principles enunciated would appear also to control as to navigable rivers in Florida, in view of the nature of the influencing statutes (§§ 271.01 and 271.09, Fla Stat 1955), the first of which granted to riparian owners of land lying upon "any navigable stream or bay of the sea or harbor" certain rights in the submerged land lying in front of the riparian tract as far as to the edge of the channel and authorizing the bulkheading and filling in of such submerged land, but specifying that the filling or other improvement was to be made "from high-water mark in the direction of the channel, or as near in the direction of the channel as practicable to equitably distribute these submerged lands"; and the latter section (271.09) defining riparian rights but not specifying how the riparian rights area in the bed of the navigable water was to be divided.

In Hayes v Bowman (Fla) supra, in which it was determined that in the circumstances presented in this case the proposed filling in by the defendants of a strip of submerged land in the bay extending some 2,300 feet out to the channel from the front of the two lots owned by the defendants on the existing shore, such fill to be 270 feet wide and to occupy an area of submerged land in the bay which had been granted to the defendants by the trustees of the internal improvement fund, would not wrongfully infringe upon the riparian rights of the plaintiffs, who owned a lot facing the bay and located about 200 feet south of the front of the defendants' waterfront lots, even though the fill when constructed would interfere with the plaintiffs' unobstructed view toward the channel over a corridor measured by extending plaintiffs' northeasterly-southwesterly lot lines directly toward the channel, but such fill would not infringe upon plaintiffs' area in the water if the lines thereof were to be drawn at right angles from the thread of the channel to the corners of the plaintiffs' lot. The court considered that in the particular situation presented, which is shown by a plat appearing in the report, the proposed

fill would not interfere with plaintiffs' enjoyment of their riparian rights over the waters of the bay in an area as "near as practicable" in the direction of the channel, would not interfere with their access to the channel, and would not be an inequitable distribution of the submerged lands between the upland and the channel. The court, however, was unable to approve the geometrical rules of division or apportionment advanced by either party, but rested its ruling more particularly upon the necessity for making an equitable distribution of the submerged land area and waters of the bay in the particular situation presented so as to preserve to each riparian owner his rights to an unobstructed view and access to the channel over an area as near "as practicable" in the direction of the channel, saying that the rule arrived at meant that each case necessarily must turn on the factual circumstances there presented and no geometrical theorem could be formulated to govern all cases.[3]

The court stated in Hayes v Bowman (Fla) supra. "Riparian rights do not necessarily extend into the waters according to upland boundaries nor do such rights under all conditions extend at right angles to the shore line. Our own precedents are completely inconsistent with the appellees' view that such rights extend over an area measured by lines at right angles to the Channel. It should be borne in mind that littoral or riparian rights are appurtenances to ownership of the uplands. They are not founded on ownership of the submerged lands. It is for this reason, among others that we cannot define the area within which the rights are to be enjoyed with mathematical exactitude or by a metes and bounds description We therefore prescribe the rule that in any given case the riparian rights of an upland owner must be preserved over an area 'as near as practicable' in the direction of the Channel so as to distribute equitably the submerged lands between the upland and the Channel. In making such 'equitable distribution' the Court necessarily must give due consideration to the lay of the upland shore line, the direction of the Channel and the corelative rights of adjoining upland owners."

The position taken in the Hayes Case (Fla) supra, may be compared with the view taken or indicated in two earlier Florida cases treated in § 10, supra.

§ 14. Proportionate frontage projection on curving or irregular shores or channels.

Where the shore is curving or irregular in front of the riparian tracts involved, or the line of the channel, thread of the stream, or other outer limit line in the river is irregular, curving, or, if straight, not parallel with the general course of the shore, the method of apportionment and division usually adopted is to give each of the riparian tracts fronting along the same shore an abutting area in the river having a width on the channel line or other outer boundary line in the river proportionate to such tract's frontage along the shore, the objective being to achieve an equitable apportionment of the available river area as between the riparian tracts fronting thereon. Various specific methods of drawing the division lines have been announced, as shown in the following jurisdictional review of the relevant cases.

The cases reviewed in this section are rather closely related to those concerned with the apportionment and division of riparian tidal flats, in § 15, infra, and sometimes have utilized the

3. "It is," the court said, "absolutely impossible to formulate a mathematical or geometrical rule that can be applied to all situations of this nature. The angles (direction) of side lines of lots bordering navigable waters are limited only by the number of points on a compass rose. Seldom, if ever, is the thread of a channel exactly or even approximately parallel to the shoreline of the mainland These two conditions make the mathematical or geometrical certainty implicit in the rules recommended by the contesting parties literally impossible."

[§ 14]

same specific method of apportionment.

The following Massachusetts case is beyond the ordinary scope of the annotation (which does not extend to the apportionment and division of areas formed by alluvion, as shown in § 1, supra) but is of importance in this connection because the principle there laid down has been much referred to and followed in some other jurisdictions in ruling upon the method of dividing riparian rights areas in a curving or irregular river.

An important equitable rule for the division of alluvion among several riparian proprietors where the alluvion had formed in a bend of a nonnavigable river and extended along in front of the lands of several different owners, was expressed and applied in Deerfield v Arms (1835) 34 Mass (17 Pick) 41, 28 Am Dec 276. The rule considered to be equitable and justifiedly applied to the particular situation presented was: (1) Measure the whole extent of the ancient bank or line of the river, and compute how many rods, yards, or feet each riparian proprietor owned on the river line; (2) Appropriate to each proprietor a length of the new river line proportionate to that which he owned on the old line; and (3) Complete the division by drawing lines from the points at which the proprietors respectively bounded on the old shore line, to the points thus determined as the points of division on the newly formed shore. It was pointed out that such lines across the alluvion would be either parallel, or divergent, or convergent, according as the new shore line of the river should equal or exceed or fall short of the old shore line. This mode of distribution, the court said, would secure to each riparian proprietor the benefit of continuing to hold to the river shore, whatever changes may take place in the condition of the river by accretion, and was a rule obviously founded in that principle of equity upon which the distribution ought to be made. The court recognized that the rule might perhaps require modification under particular circumstances, and pointed out that in applying the rule to the ancient margin of the river, the general line ought to be taken and not the actual length of the line on that margin if it happened to be elongated by deep indentations or sharp projections, in which case it should be reduced by an equitable and judicious estimate to the general available line of the land upon the river.

The rule of division laid down in Deerfield v Arms (Mass) supra, was expressly approved and adopted by the United States Supreme Court in Johnston v Jones (1861, US) 1 Black 209, 17 L ed 117, involving accretions on the shore of Lake Michigan at Chicago.

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It may be suggested that where the riparian tracts involved front on a long, sweeping curve of a large river having a regular shore line, an equitable apportionment of the riparian rights area in the river could well be achieved simply by running the divisional side lines therein at right angles to the shore or to the thread of the stream. See, as indicative of this view, Municipality No. 2 v Municipality No. 1 (1841) 17 La 573, supra, § 12, ruling that wharves should be run out into the Mississippi River (at New Orleans) at right angles to the levee.

Maryland.

A Maryland case contains dictum recognizing that where the shore is concave the right of riparian owners to wharf out to the deep-water line must be exercised "within converging side lines which proportionately divide the tidewater shore among such owners." See Baltimore v Baltimore & P. S. B. Co. (1906) 104 Md 485, 65 A 353, supra, § 12.

As construing a Baltimore city ordinance and a map referred to therein as specifically fixing the side lines and limits of the water frontage areas of certain riparian lots out to and along the bulkhead and pierhead lines in the Patapsco River, see Classen v Chesapeake Guano Co. (1895) 81 Md 258, 31 A 808, noted in § 3[a] supra.

For cases involving division-line

projection and the permissible location of shooting blinds in a river, under a Maryland statute, see § 16, infra.

Massachusetts.

See Deerfield v Arms (1835) 34 Mass (17 Pick) 41, 28 Am Dec 276, supra, involving division of alluvion along a curve in a nonnavigable river.

New York.

In O'Donnell v Kelsey (1852) 10 NY 412, affg 6 NY Super Ct (4 Sandf) 202, where the state had granted to various riparian proprietors fronting on the East River in Brooklyn the land under water in front of their premises, with the right to erect bulkheads and wharves up to certain lines in the river, and the original shore line in front of the premises contained deviations and indentations, but the pierhead line established by the legislature was straight except for one change of course (the westerly part of the line running in a somewhat different direction than the easterly portion thereof), the court considered that the legal method for dividing the land under water thus granted was to take as a base a straight line drawn between the two extreme points of the pierhead line fixed by the grant, and to give each riparian owner a length upon such outer water line proportionate to the length of his original shore line, so that as the whole shore line was to the whole water line, so each one's share of the shore line would be to each one's share of the water line. However, it was held that inasmuch as the various riparian owners, including the defendant, had laid out lots in the water-front area by lines corresponding to the lines of a street which met the shore at a very oblique angle and the defendant had long acquiesced in a division of the water front along lines corresponding to the side lines of that street as extended in the same course over the water, the defendant was barred, by such acquiescence, from now asserting a right to extend his lines out from the original shore at right angles to the shore or at right angles to the pierhead base line and must be confined to an extension of his frontage only in the oblique direction fixed by the street lines and by the plats adopted by himself and his adjoining riparian proprietors.[4]

Virginia.

In Groner v Foster (1897) 94 Va 650, 27 SE 493, an equitable action to determine the lines of division from the shore out of the port warden's line in the Elizabeth River, comprising a portion of the Norfolk-Portsmouth Harbor, as between several riparian owners on the same shore, where it appeared that the port warden's line ran some 1,600 feet in a straight line and then turned and ran at nearly a right angle thereto about 1,500 feet to a point where a creek emptied into the river, and that the lands of the parties lay upon the shore of the river in a geometrical position equivalent to the hypotenuse of a right-angled triangle formed by the

4. It may be noted that the lower court's opinion in the O'Donnell Case (in 6 NY Super Ct (4 Sandf) 202) referred to the rule in Deerfield v Arms (1835) 34 Mass (17 Pick) 41, 28 Am Dec 276, supra, as being a simple and just rule, but the court thought that since only two immediately adjacent landowners were involved in the present case, there was insufficient information before the court to divide the areas in accordance with that rule. It was further considered that the rule laid down in Emerson v Taylor (1832) 9 Me 42, 23 Am Dec 531, infra, § 15, was inappropriate and would not be equitable where, as here, the course of the shore was crooked but the outer line in the river was straight. The court thought that the better rule, which could be applied here where the exterior or permanent line was a straight line running parallel to the general course of the shore, was that a base line should be drawn parallel to such exterior line, and lines then drawn from the ends of the land division lines of each proprietor where they touched the shore to the exterior line, and at right angles to the base line, each proprietor to then have the area within the limits of such division lines and the exterior line.

shore line and the two branches of the port warden's line, it was held that in allocating to each party a distance along the port warden's line proportionate to such party's ownership of the shore line, the entire port warden's line throughout both branches thereof must be taken into consideration, and it was erroneous to exclude from the computation the 1,500 feet of the port warden's line running to the mouth of the creek. It was pointed out that the trial court, by erroneously excluding that portion of the port warden's line, had reached an improper result that gave one party, who owned 819 feet of the shore line, only 604 feet on the port warden's line, but another party, who owned only 258 feet of the shore line, the 190 feet on the port warden's line (in so far as it was apportioned) and also the whole of the 1,500 feet of the port warden's line running to the mouth of the creek. The proper rule, the court said, was to include the entire port warden's line in the computation and divide it proportionately between the two parties in accordance with their line on the shore measured at low-water mark.

It was held in Waverly Water-Front & Improv. Co. v White (1899) 97 Va 176, 33 SE 534, 45 LRA 227, that as between riparian lands on the shore of Crawford's Bay in the Elizabeth River, where the shore ran along the northerly border of some of the properties but turned so as to run along the easterly border of other adjoining properties, the riparian rights in the water area were to be apportioned in accordance with the principles established in Groner v Foster, supra, so as to give each riparian owner a distance along the port warden's line proportionate to his shore line, the court saying that this case was simply the converse of the Groner Case in that here the shore lines were longer than the port warden's line (whereas in the Groner Case the port warden's line was longer than the shore line), but the principle of division applied with equal force here. The main question in the case was whether the lots along the southern shore of the bay were actually riparian, since the grants thereof described them as extending to the high-water mark. As to this, the court held that under Virginia law the conveyance to the high-water mark boundary actually gave the grantees title to the low-water mark and thereby entitled them to the privileges of riparian owners in the area out to the port warden's line.

Cordovana v Vipond (1956) 198 Va 353, 94 SE2d 295, 65 ALR2d 138, involved two adjoining residential lots on the shore of a small peninsula which ran southwardly into the Lafayette River. Complainants' lot 5 was bounded on its east side by the river shore, and respondents' lot 6 lay immediately south of lot 5 and occupied the entire southern end of the peninsula. On the plat by which the properties were purchased, the division line between lot 5 and lot 6 started at the east line of a street and ran thence north 80 degrees 30 minutes east a distance of 120 feet to a point in the river designated by the high-water mark line. Complainants objected that respondents were maintaining a fence which cut off complainants' lot 5 from the riparian area to which it was entitled. The trial court's ruling that the boundary between lots 5 and 6 extended into the river below low-water mark in the same course that it pursued over the upland was held erroneous, in view of evidence, including map exhibits, which showed the winding, irregular course of the river, the location of the two lots with relation to the river, lines plainly designating the high and low-water marks, and the portion of the river to the eastwardly of the two properties reserved by the subdividers for a boat basin, the appellate court ruling that in this situation, and particularly in view of the Virginia statute providing that the limits or bounds of tracts of land lying on navigable rivers should extend to low-water mark but no farther, the upland boundary should extend only down to low-water mark and from that point out to the line of navigability

the respective riparian areas of the two adjoining riparian tracts should be ascertained and divided in accordance with the formula laid down in Groner v Foster (1897) 94 Va 650, 27 SE 493, supra, that is to say, the court should measure the length of the shore, and ascertain the portion thereof to which each riparian proprietor is entitled; next measure the length of the line of navigability, and give to each proprietor the same proportion of it that he is entitled to of the shore line; and then draw straight lines from the points of division so marked for each proprietor on the line of navigability to the extremities of his lines on the shore, this being the proper method by which each proprietor on the shore would be given, as directly in front of his land as practicable, a parcel of the land under the water of a width at its outer end upon the line of navigability proportioned to that which it has at the inner or shore end.

In Rice v Standard Products Co. 1957) 199 Va 380, 99 SE2d 529, affirming a decree which established the riparian boundary out to the line of navigability as between two riparian owners on a navigable creek, such line being drawn by determining the line of navigable water and giving each proprietor a length thereon proportionate to the length of his shore line at low-water mark, in accordance with the rule laid down in Groner v Foster, supra, the court found no errors of law apparent on the face of the record and nothing to indicate that the chancellor did not apply the proper formula. This opinion is of additional interest for its quotation of the chancellor's decree specifying just how the division line from low-water mark out to the line of navigability (which was the 10-foot contour at mean low water) was located and fixed by the court where the line of navigability was only some 115 feet in length and was apportioned as between one party whose shore line was 292 feet and the other party owning 375 feet of shore line.

The following somewhat distinctive Virginia case, decided in 1912, involved a situation in which it was considered that only the line of division out to the port warden's line as between two large tracts of riparian land need be determined, and that the circumstances were such that the rule of Groner v Foster, supra, would not be applied in locating such division line.

Where the respective properties of a railroad company and another corporation extended along about 2 miles of shore line on the Elizabeth River, a navigable river having a port warden's line established therein, the shore was somewhat irregular and curved, and the port warden's line in front of the properties was longer than and not parallel with the shore line, the court considered that the facts ordinarily would make applicable the rule of apportionment laid down in Groner v Foster, supra, but that where only the two parties were involved and they owned between them almost 2 miles of the shore and the real question in the case was as to the direction in which the division line between the two properties should be extended from the shore out to the port warden's line, there was no necessity for taking into consideration the entire shore line of both parties and the proper rule here, where the shore line and the port warden's line were not parallel and the waters of the river had no defined stream running in a confined and continuous bed, was to treat the shore line as the base line and extend the line therefrom out to the port warden's line, rather than to run the division line at right angles from the port warden's line to the shore. Lambert's Point Co. v Norfolk & W. R. Co. (1912) 113 Va 270, 74 SE 156, which also rules to the effect that where the railroad company at one point in front of its property had filled in and built wharves out to the port warden's line, it would be improper to include the measurement of the so filled-in extension into the water in computing the shore line for purposes of apportionment and ascertainment of the division

line, the proper method being to measure the shore as it existed before so filled in. It is difficult to say just how far this opinion adheres to or departs from the rule of Groner v Foster, supra; it reiterates the rule and indicates that there was nothing in this case to take it out of the rule of that case, but further indicates that it was unnecessary here to determine the outside side lines of the two parties, who were the only parties in the case, and that in determining the division lines between them out to the port warden's line, the shore line should be considered as a base and the division line run out at right angles to the shore line under the circumstances here presented. It was pointed out that by a section of the Virginia Code it was provided that any person owning land upon a watercourse may erect a wharf on the same, or pier, or bulkhead, provided navigation was not obstructed, nor the private rights of any other person injured thereby, and the effect of such statute was that the landowner was entitled to have his portion of the water front laid off as nearly in front of his land as is practicable.

§ 15. Division of riparian tidal flats.

Only a few jurisdictions are represented by cases ruling on the method to be adopted in apportioning and dividing tidal flats on rivers as between riparian tracts fronting along the same bank of the river. The tendency has been to run the division lines over the flats so as to give each riparian tract an outer line along the low-water mark (or other outer limit) proportionate to the length of its frontage along the high-water line.

As a cautionary remark, it should be said that in the apportionment and division of tidal flats there would seem to be no particular reason for distinguishing between tidal flats along the ocean shore or harbor thereof and tidal flats along a river, but this annotation is limited in its scope to the question as it has arisen regarding the division of lands in the water or bed of rivers and consequently the tidal flats cases covered herein are limited to those in which the opinion brings out that the locus was a river. It seems probable that in most of the states represented by the cases herein an even greater number of flats division cases have arisen with respect to tidal waters not described as being in or along a river. For general treatment of the matter of apportionment and division of tidal flats, see 56 Am Jur, Waters § 463, and the annotation covering division of a water front, alluvion, and flats between adjoining riparian owners, in 21 LRA 776, 25 LRA NS 257, and LRA1917B 786.

Maine.

A rather distinctive geometrical method for proportionately dividing tidal flats was developed and applied in a rather early case in this jurisdiction, and may possibly remain the ordinary method, although it must be said that no recent Maine cases concerned with this subject as it relates to tidal flats on rivers have been found in preparing this annotation.

In the early case mentioned, Emerson v Taylor (1832) 9 Me 42, 23 Am Dec 531, involving a controversy between two adjoining owners of lands fronting on a tidal stream, concerning the division line between them over the tidal flats below high-water mark, the court laid down a rule for the division of tidal flats which it illustrated by two plats published with the opinion and which it expressed as follows: Draw a base line from the two corners of each lot, where they strike the shore; and from those two corners extend parallel lines to low-water mark, at right angles with the base line. If the line of the shore is straight (as in the case before the court) there will be no interference in running the parallel lines. If the flats lie in a cove, of a regular or irregular curvature, there will be an interference in running such lines, and the loss occasioned by it must be equally borne or gain enjoyed by the contiguous owners. Plat B, illustrating the method, shows a curving shore and curving low-

water line with the upland division lines of the various owners along the shore striking the shore or high-water line at various angles; shows the base line constructed in front of each lot where its side lines met the shore; shows the lines drawn across the flats at right angles to each of the individual base lines; and shows that as between each of the adjoining tracts the division line across the flats was determined by running a division line out at such an angle as would evenly divide the triangular area formed by the projection of the right-angle lines from the respective base lines of the adjoining tracts. Reference to the plat (which appears in both reports of the case) will make clear the plan of division adopted.[5]

In the Emerson Case (Me) supra, after pointing out that in Maine the right of the owner of upland property to the tidal flats in a navigable stream bounding such property was based upon the principle of the Colonial Ordinance of 1641, as a part of the state's common law, the provision in the ordinance being that in all creeks, coves, and other places about and upon salt water, where the sea ebbs and flows, the proprietor of the land adjoining "shall have propriety to the low-water mark, where the sea doth not ebb above a hundred rods, and not more wheresoever it ebbs further," the court said that the expression "to the low-water mark" seemed to imply to the low-water mark in the nearest direction and without any regard to the course of the side lines of the upland to which the flats were adjoining and appurtenant, and concluded that the proper construction of the matter was that the direction of the division lines over the tidal flats was in no wise controlled by the direction of the division lines over the upland.

The rule of Emerson v Taylor, supra, has been held to apply only to the original division of lots on the upland and not to be applicable so as to change the areas and boundaries of the flats by reason of any subsequent subdivision of one or more of such upland lots. Call v Carroll (1855) 40 Me 31.[6]

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As an instance in which it appeared that for more than 50 years each of the parties and those under whom they claimed had occupied the flats in front of their adjoining lands on the Penobscot River in conformity to lines ascertained by a direct extension over the flats of the lines bounding their uplands, such occupation was adverse and open and notorious, and was held sufficient to authorize the inference that the flats had been apportioned to each upland lot in accordance with the lines adopted by the landowners' long-continued and

5. A new Jersey opinion states that the rule of division adopted in Emerson v Taylor, supra, is so uncertain and impracticable, that it can never be adopted anywhere permanently as the rule of division of the shore. "It would always vary at any point on high-water line," said the court, "if either of the adjoining proprietors, before runnnig the division line, should sell some of his shore front, or increase it by purchase." Stockham v Browning (1867) 18 NJ Eq 390, in which the court did not decide which was the proper rule of division to be adopted in New Jersey inasmuch as it found that the particular division line from the high-water mark to the low-water mark as between the parties in this case had been settled by long-continued acquiescence and acknowledgment of a particular line.

6. In this case the rule laid down in Emerson v Taylor, supra, was reaffirmed and applied as being the proper rule for equitably dividing the flats of lots as established by an original and contemporaneous division of the upland, but it was further held that upon a subsequent subdivision of the upland lots, the lines of the respective flats were not to again be reapportioned by applying the rule of Emerson v Taylor to the new and shorter base lines of the subdivision tracts, but the lines of the flats of the subdivided lots were to remain in the same course and direction as the lines over the flats established upon the basis of the original lots. Call v Carroll, supra.

exclusive occupation, the result being that it was no trespass for the defendant to remove a weir which the plaintiff had built on the flats at a point on the defendant's side of their division line as determined by an extension of the upland division line in the same course over the flats, see Treat v Chipman (1852) 35 Me 34. The opinion contains a discussion of the rule laid down in Emerson v Taylor, supra, and points out that no serious difficulty had been found in the application of that rule to the flats found in the larger rivers and coves of Maine, but that it had been at all times admitted that there might arise cases in which the rule could not be applied, the court considering that in the case at bar a settlement of lines upon the flats in a way contrary to the rule of the Emerson Case was to be inferred from the long-continued occupation of such flats by the parties in the manner shown by the record.

And note that in a case involving a dispute between two adjoining owners of land and tidal flats on Portland Harbor, it appearing that in a prior suit between the parties the divisional line between their properties from high-water mark down to low-water mark had been established, the court considered that such determination was also effective to determine and establish the division line between them in the area in the water below high-water mark as being a continuation of the same line, and held, consequently, that since a wharf maintained by defendant in the area of the river below the low-water mark encroached across such division line onto plaintiff's area in the water, defendant would be enjoined from maintaining the so-encroaching portion of the wharf. See Maine Wharf v Custom House Wharf (1892) 85 Me 175, 27 A 93.

For a case in which the court, by construction and application of the terms of the description in a deed, ascertained the course and location of certain boundaries over tidal flats in a river, see Kennebec Ferry Co. v Bradstreet (1848) 28 Me 374.

Massachusetts.

It was provided by the Colonial Ordinance of 1647 (commonly referred to as the Ordinance of 1641) that "in all creeks, coves and other places about and upon salt water, where the sea ebbs and flows, the proprietor of the land adjoining shall have propriety to the low water mark, where the sea doth not ebb above a hundred rods, and not more wheresoever it ebbs further: . . ."

By an important Massachusetts case (involving tidal flats on a salt-water cove in Gloucester harbor) the basic general principles for determining the boundaries or divisions of tidal flats, as between coterminus estates, developed by judicial construction applying the principle of the Ordinance of 1647 to the facts of particular cases, were stated to be as follows: "First, the dividing lines are generally to be drawn in the most direct course from high water mark towards low water mark. . . . Second, wherever it is practicable, each proprietor is entitled to the flats in front of his upland of the same width at low water mark as at high water mark. . . . Third, which is perhaps the fundamental rule, underlying and controlling all others, the flats are to be so divided as to give to each parcel a width at its outer or seaward end proportional to that which it has at high water mark." Wonson v Wonson (1867) 96 Mass (14 Allen) 71, infra.

In Ashby v Eastern R. Co. (1842) 46 Mass (5 Met) 368, 38 Am Dec 426, in which the plaintiffs sought damages from a railroad company by reason of construction of the railroad across certain tidal flats claimed by plaintiffs as appurtenant to their premises on an arm of the sea called South River, the court, in finding that the jury had been misinstructed, had occasion to say that if the tract of flats had no channel running through it, that is, no depression from which the tide did not ebb at low water, then it must have been a cove, and

all the riparian proprietors on the cove would divide the flats amongst them, by lines drawn from their respective lands to the channel, running by the mouth of the cove from which the tide flows into the cove, giving each a line on the channel proportioned to his line on the cove; but that if there was an original natural channel, through the cove or river, formed by a stream of fresh water falling into it above, or otherwise, then it was a river or arm of the sea, through which the tide ebbed and flowed, and each riparian proprietor was entitled to the flats, to such channel or stream, if not exceeding 100 rods. The court said that the jury should have been instructed that the burden of proof was upon the petitioners to prove their title to the soil of the flats claimed, and for that purpose to prove that the original channel or line of low-water mark extended so far as to include the soil, or some part thereof, over which the railroad was laid; and that if they failed to establish their title by such proof, their claim for damages on that ground could not be sustained.

As setting forth a method for dividing flats in a cove, attention is called to Wonson v Wonson (1867) 96 Mass (14 Allen) 71, which dealt with flats in a cove in Gloucester harbor and does not refer to the water as being a river, and so is beyond the general scope of this annotation. The court stated that the ordinary mode, established by the Massachusetts decisions, of applying the general principles[7] to the division of flats in a cove, is to take the whole length of the upland at high-water mark, ascertain each owner's proportion, and give him the same proportion on the low-water line and in the same order, and then draw the side lines straight from each proprietor's lines at high water to his corresponding points at low water. The court added that such mode of division is usually the simplest and the most convenient; it is governed by the natural and the legal lines of proprietorship; it extends from the inner to the outer limit of the tract to be divided; it secures to each estate a proportional division of the flats and direct access to the sea, and is essentially the same rule by which accretions by alluvion upon the bank of a river or lake are divided among the riparian proprietors. The opinion sets forth a plat of the area, discusses in detail various other possible plans of division considered by the commissioners in these proceedings, and concludes that the method expressed in the above statement was the appropriate one to be adopted here.

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In Tappan v Boston Water Power Co. (1892) 157 Mass 24, 31 NE 703, 16 LRA 353, involving certain tidal flats on Muddy River in Boston which were situated upstream from the line of low tide but through which a fresh-water river continued to flow at low tide, the court, in determining the appropriate division of such flats as between *opposite owners*, considered that it was impracticable to extend the lines of division to the tidewater low-water mark, or to follow the rules of division laid down for flats in a cove; that on the contrary, the most satisfactory analogy here would seem to be that presented by a fresh-water stream or river where the line of division between opposite proprietors is the thread of the stream; and, taking the view that the thread of the stream meant the center line from one bank to the other at the ordinary state of the water, which center line might or might not coincide with the channel, the court concluded that with respect to the flats in this case the demandants were respectively entitled to recover so much as fell within straight lines drawn from the termini on its banks at the ordinary stage of the water of the side lines of their respective marshlands out to and at right angles with the center line of the stream. The question of side-line boundaries seems only to have been incidentally considered here, the real

7. A quotation from the Wonson Case, setting forth the general principles, appears at the outset of this subsection.

controversy apparently being as to the proper location of the line along the flats dividing those appurtenant to riparian land fronting on one bank from those appurtenant to riparian land fronting on the opposite bank along the same stretch of the river.

New Jersey.

See Stockham v Browning (1867) 18 NJ Eq 390, involving the course of a division line from the high-water mark to the low-water mark on the shore of the Delaware River, not referring to the area as constituting tidal flats but giving some attention to the rules adopted in other states for the division of tidal flats and concluding that by long-continued acquiescence and acknowledgment, the division line in this case had been fixed as being a direct extension of the upland division line in the same course across the shore area. See brief treatment of this case, supra, in footnote 5.

Washington.

For an instructive modern case ruling as to the proper division of tidelands on a bay of the ocean as between adjoining upland tracts fronting on a concave shore, see Spath v Larsen (1944) 20 Wash 2d 500, 148 P2d 834, in which the court, after reviewing many of the rulings on this matter, and taking the Massachusetts rule as its basic guide, stated the following general principles which should be applied in determining the boundary line in the case at bar: "First: In adjudicating the ownerships of tidelands between adjoining upland owners on a concave shore line, each upland owner is entitled to a proportionate share of the tidelands extending to the low water mark. Second: The course or courses of the boundaries of the upland properties should be disregarded, each upland owner being entitled to share ratably in the adjoining tidelands, having regard only to the amount of shore line which he owns, lying between the points where the lateral boundaries of his upland meet the shore line or the government meander line, whichever, in the particular case, constitutes the water boundary of his upland. Third: Tidelands should be apportioned between the respective upland owners so that as the whole length of the water boundary of the land within the concave shore, cove or bay, is to the whole length of the low water line, so is each landowner's proportion of the shore line to each owner's share of tidelands along the line of low water. Tidelands may be divided between adjoining owners by erecting lines perpendicular to the general course of shore line only in cases where the shore line is straight, or substantially so."

It will be recognized that the Spath Case, supra, is not strictly within the scope of this annotation, the tidelands involved being on Sequim Bay on the ocean, rather than along a river. The case is included because closely related to and of value in connection with the present topic.

§ 16. Miscellaneous special problems and rulings.

For a method of locating the center line or thread of a river where two tributaries merge into a main river, in delineating the river-area boundaries of a riparian proprietor of land lying alongside one tributary and the main river, see Application of Central Nebraska Public Power & Irrig. Dist. (1940) 138 Neb 742, 295 NW 386, supra, § 8[b].

The following Connecticut case involved the distinctive circumstance that the plaintiff's land fronted on a portion of the shore of a shallow, pouched-shaped cove, opposite the narrow opening of the cove leading into the main river.

In Richards v New York, N. H. & H. R. Co. (1905) 77 Conn 501, 60 A 295, 69 LRA 929, it appeared that upon the east side of a navigable river (the Thames) there was a pouch-shaped cove about 1,600 feet long north and south but having an opening into the river only about 450 feet wide. There was no channel in the cove and the water depth was only about 2½ feet at mean low tide. Several different parcels of land fronted

on the cove, plaintiff's land fronting on the east shore thereof opposite the opening or mouth to the river. A railroad company, acting under legislative authority, had constructed its railroad on a solid embankment alongside the river and across the mouth of the cove, leaving only an opening 16 feet wide therein, bridged over by the railroad tracks. In plaintiff's suit against the railroad for damages on the theory that the latter had cut off plaintiff's land from access to the navigable river, thereby interfering with plaintiff's riparian rights, the court considered that in the circumstances presented the riparian rights of the plaintiff and the other owners of land fronting upon the cove related only to the cove and were to be confined thereto and did not extend to the main river, except as to the right of access to the main river and the navigable water therein, which, the court held, had merely been somewhat interfered with but not destroyed by the railroad's construction and maintenance of the embankment, since the plaintiff could still get from her land to the river through the waters of the cove and through the opening left in the embankment, the result being that plaintiff was entitled to only nominal damages. The court pointed out that among the most important of the rights and privileges of the riparian owners in the cove and its waters were (1) the right of access by water to and from their upland; (2) the right to wharf out in their front; and (3) the right of reclamation or accretion. But it was emphasized that the right to wharf out and the right of reclamation or accretion was, in this situation, confined to the cove and to be exercised therein, and not in the main river, and must be exercised by each owner subject to the riparian rights of his neighbors and to the rights of the public in the cove and its waters, the court considering that although plaintiff owned the land fronting on the cove opposite the mouth thereof, that situation gave her no right to wharf out to the main channel of the river thereby destroying the riparian rights of her neighbors on the cove and especially their right of access.

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In Maryland, some distinctive cases have involved the meaning and effect of a statute regulating the erection and location of duck blinds in rivers or other waters by owners of land bordering thereon.

The pertinent part of the statute, cited in the Councilman Case (Md), infra, as Art. 99, § 47(a) provided: "(a) Whenever an owner of land bordering on any waters of this State shall desire to erect a booby, brush or stake blind in front of his property, or other person to whom he shall give permission, he shall not place same within 250 yards of the dividing line of any property owned by him and the adjoining property bordering on said waters . . . , meaning a line extending out over the waters drawn direct from the dividing line of said properties at the shore line, unless with the consent of the adjoining landowner, same being for the purpose of allowing each landowner bordering on any of the waters of the State permission to avail himself of the privilege of setting, erecting or maintaining a booby, brush or stake blind in front of his property."

Under the above quoted Maryland statute, where it appeared that adjoining tracts C and K fronted on the Choptank River, the division line between the tracts running through the waters of a small creek, that the Choptank shore curved sharply at about the point where the creek division line reached the river, so that tract C lay generally east of the river and tract K lay north of the river, and that after the owner of tract C and a lessee of tract K had each constructed a blind out in the river, the State Game Warden had ordered the removal of the tract C blind, on his finding that it was within the prohibited distance from the division line, the court in Councilman v Le Compte (1941) 179 Md 427, 21 A2d 535, ruled that in the

[§ 16]

situation here presented it was not proper to determine the division line in the river by running a line out from the shore (starting at the end of the upland division line in the middle of the creek) so as to meet the center line of the river at substantially right angles (as the Game Warden's survey had done), whereby the owner of tract C was deprived of his right to have a duck blind, nor would it be proper to simply extend the upland division line straight out over the water of the river where such a direct extension would have carried the division line directly across the water front of tract K and thereby deprive the owner of that tract from his right to erect a blind in front of his property. The court concluded that under the circumstances involved here some other method of dividing the waters which were common to the two properties must be found; that such method must be equitable and fair to all parties concerned; and that if such a method could not be found then the statute could not be applied against any of the interested parties, and the difficulty must be adjusted by mutual accommodation.

The court particularly noted, in the Councilman Case (Md) supra, that the controversy at bar was not between the adjoining riparian owners but was an attempt by the owner of tract C to prevent the state from determining which of two property owners should be denied a privilege the statute sought to protect. And the court said that the state could not, through its agent, award to one, and deny to another, a right to which both the property owners were equally entitled.

For another related case involving location of the division line over the water under this same "duck blind" statute, see Sheehy v Thomas (1928) 155 Md 688, 142 A 506, involving tracts fronting on Todd's Bay, described as an inlet of the Great Choptank River.

C. T. FOSTER.

+ Consult ALR2d SUPPLEMENT SERVICE for subsequent cases +

M. W. MEYERSON, as Exr. of the Will of Sadie Malinow, Deceased,

v

IRVIN BROWN MALINOW and Stanley D. Malinow, Individually and as Trustees under the Will of Mayer Malinow, et al.

South Carolina Supreme Court — March 4, 1957

231 SC 14, 97 SE2d 88, 65 ALR2d 194

SUMMARY

Rights under a will were involved in the instant action by the testator's widow against her stepsons. The will bequeathed to the sons shares of corporate stock which were expressly subjected by the will to a charge for payment by the sons of $50 per week to the widow. These payments were made by the sons for about 5 years, when they were terminated on the alleged ground that the widow was considerably indebted to the sons for various sums of money given to her or paid out on her behalf.

On an appeal by all parties, a judgment of the Common Pleas Court, Spartanburg County, South Carolina, confirming a master's report recommending a judgment in favor of the widow for arrearages in the weekly payments, but denying her claim for attorneys' fees and damages for