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BOTH LAW AND MEDICINE are plagued with diseases of obscure etiology. These are the diseases in which the cause or causes are unknown or in which the role of trauma is at least an uncertain factor. For law the question is whether damages may be awarded where one who suffers from a disease is unable to show that trauma is recognized by medicine as a factor in the causation or aggravation of that disease. The legal issue may arise in tort actions or in workmen's compensation proceedings, and in the latter not only trauma but also other types of occupational exposures may be the alleged cause.

The absence of knowledge on etiology is not so much an irritation to medicine as it is to law, however. To the doctor the "cause" in any particular case may indeed be irrelevant. The doctor diagnoses on the basis of symptoms and treats pragmatically on the basis of the effects of previously successful methods. The doctor is likely to regard all diseases as obscure to a point; he sees no bright line between diseases of "known" and of "unknown" etiology. Further, he sees diseases as of multiple causation. To him it may seem unrewarding to talk of one specific "cause." [1]

The purpose of this note is to gather and analyze legal cases which have involved diseases characterized by the courts or medical witnesses as being of obscure etiology or in which the role of trauma is uncertain.[2] Basic to this discussion is an understanding of the concepts of causation, precipitation and aggravation as they are used both legally and medically. These concepts

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[1] From the medical standpoint, see Brahdy, ed., Disease and Injury (1961); Reed & Emerson, Relationship Between Injury and Disease (1938); Leas, Trauma and Disease, in Medical Facts for Legal Truth 20 (Schroeder ed. 1961). Two good works of a medico-legal nature are Schweitzer, Proof of Traumatic Injuries (1961); American Jurisprudence, Proof of Facts. For damages aspects see, Belli, Modern Trials (1954 plus supp.); Oleck, Damages to Persons & Property (1961 revision). See also Moritz & Thulberg, eds., Trauma and Disease (1959).

[2] Excluded from this note, therefore, are the numerous, common cases in which it is medically well-acknowledged that trauma has a role in the causation or precipitation of the disease and the only issue is whether in fact in the particular case trauma was a substantial factor. Examples are diabetes, polio, ulcers, and heart disease.

have been well described from the medico-legal point of view in recent articles by Averbach[3] and others.[4]

List of Diseases Regarded as Obscure[5]

A. *Multiple Sclerosis.*[6] A good number of cases have involved awards for multiple sclerosis following subjection to trauma, both in tort[7] and in workmen's compensation actions.[8]

B. *Amyotrophic Lateral Sclerosis.*[9] Only two cases have been found involving a claim for amyotrophic lateral sclerosis, a fatal neuromuscular disease commonly referred to as "Lou Gehrig's Disease." [10] In one, *Smith v. Stevens,*[11] the worker's evidence indicated that his condition, following a fall, was either ALS or Guillain-Barré syndrome, itself a disease of obscure etiology.[12] The court, in reversing a dismissal on the worker's case, stated:

> While it is true that accidents, physical conditions, and the symptoms indicating disability, could have been coincidents, it does not seem at all probable in a man who had no knowledge from experience or information of any latent disease or physical impairment. After giving due consideration to all the evidence, the history and nature of the accident, and the sequence of events following the accident, we are of the opinion that the evidence of the plaintiff preponderates.[13]

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[3] Averbach, Causation: A Medico-Legal Battlefield, 6 Clev.-Mar. L. Rev. 209 (1957).

[4] Small, Gaffing at a Thing Called Cause, 31 Tex. L. Rev. 627 (1953). Note, Causation in Disease: Quantum of Proof Required to Reach The Jury, 53 Nw. U. L. Rev. 793 (1959); Annot., 66 A. L. R. 2d 1082.

[5] See the excellent medical discussion by Dr. D. S. O'Doherty, 8 Practical Lawyer 31 (Feb. 1962); see also Brahdy, supra note 1, at 353.

[6] Brahdy, supra note 1, at 353.

[7] Weller v. Northwest Airlines, 239 Minn. 298, 58 N. W. 2d 739 (1953); Sourian v. Jones, 350 Ill. App. 365, 112 N. E. 2d 920 (1954).

[8] Cohrs v. Igo Bros., Inc., 71 N. J. Super 435, 177 A. 2d 284 (1962); Mechanics Universal Joint Div. v. Ind. Comm'n, 21 Ill. 2d 535, 173 N. E. 2d 479 (1961); Stella v. Mancuso, 7 App. Div. 2d 673, 179 N. Y. S. 2d 169 (1958); Missouri Pacific Trans. Co. v. Miller, 227 Ark. 351, 299 S. W. 2d 41 (1957); Pipero v. Klar, 279 App. Div. 2d 960, 111 N. Y. S. 2d 156 (1952); Galloway v. Ford Motor Co., 5 N. J. 396, 75 A. 2d 855 (1950); Schust v. Wright Aeronautical Corp., 7 N. J. Super 54, 71 A. 2d 894 (1950); Hebert v. Fifteen Oil Co., 46 So. 2d 328 (La. App. 1950).

[9] From the medical viewpoint, see Alpers & Farmer, 62 Arch. Neurol. Psychiat. 178 (1949); Veit, 106 J. Nerv. Ment. Dis. 129 (1947).

[10] Smith v. Stevens, 173 Neb. 723, 114 N. W. 2d 724 (1962); Harrison v. Keller, 117 N. W. 2d 477 (Iowa 1962).

[11] See note 10.

[12] A settlement for Guillain-Barré disease following trauma in a compensation case is reported in 3 NACCA News Letter No. 6 (April 1960) p. 18.

[13] At p. 729.

C. *Paget's Disease.*[14] Four cases[15] have been found dealing with Paget's Disease, also called osteitis deformans, one of which, *Brett v. J. M. Carras, Inc.*,[16] is to be regarded as one of the leading cases in the field of obscure disease compensation since it states that the issue of causation is for the jury even though medicine has not made up its mind yet with absolute certainty.

D. *Buerger's Disease.*[17] The opinion of the Supreme Court in the *Michalic* case[18] is the leading case involving Buerger's Disease, which is sometimes referred to as thromboangiitis obliterans. A number of other cases have also allowed tort[19] and compensation actions.[20]

E. *Carcinomas.* So much has been written on the specific subject of cancer as a disease of unknown etiology and in which trauma is an unknown factor and so many cases have been decided on the issue that it will serve the purposes of this article merely to make reference to some general works. The outstanding article[21] here is Parsons, *Sufficiency of Proof in Traumatic Cancer Cases.*[22]

F. *Leukemia.* Damages have been awarded in cases of leu-

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[14] See Brahdy, supra note 1 at 363; Flaxman, Medical Trial Tech. Quar., June, 1956, p. 1.

[15] Brett v. J. M. Carras, Inc., 203 F. 2d 451 (3d Cir. 1953); Roth v. Board of Trustees, 49 N. J. Super 309, 139 A. 2d 761 (1958); Flynn v. First National Bank & Trust Co., 131 Conn. 430, 40 A. 2d 770 (1944); W. P. Fuller & Co., v. Ind. Acc. Comm'n, 27 Cal. Rptr. 401 (Cal. App. 1962).

[16] See note 15.

[17] See Schweitzer, supra note 1, s. 235; Medical Trial Tech. Quar. 1955 Annual 44, 264.

[18] Michalic v. Cleveland Tankers, Inc., 364 U. S. 325 (1960).

[19] Allied Van Lines v. Parsons, 80 Ariz. 88, 293 P. 2d 430 (1956); Cincinnati Realty Co. v. McElvoy, 250 S. W. 2d 931 (Tex. Civ. App. 1952); Powell v. Preston Theaters Corp., 63 Idaho 594, 124 P. 2d 562 (1942).

[20] Newman v. Kamp, 374 P. 2d 100 (Mont. 1962); Forbes v. Jung Mfg. Co., 125 F. Supp. 679 (D. Minn. 1954); Quaker Oats Co. v. Ind. Comm'n, 414 Ill. 326, 111 N. E. 2d 351 (1953) (a leading case); United States Pipe & Foundry Co. v. Ind. Acc. Comm'n, 201 Cal. App. 2d 545, 20 Cal. Rptr. 395 (1962).

[21] While reference is made only to trauma in the text, there are other alleged causes of cancer which raise issues of liability, including the smoking of tobacco and exposure to various chemicals in industry.

[22] 46 Cornell L. Q. 581 (1961), repr. 1962 Personal Injury Annual 337. See also Brahdy, supra note 1, at c. 10; Auster, The Role of Trauma in Oncogenesis; A Juridical Consideration, 175 J. A. M. A. 946 (1961), repr. 2 Tort & Medical Yearbook 512 (1962).

kemia when that form of cancer has followed trauma,[23] radiation,[24] or exposure to various chemicals.[25]

G. *Hodgkin's Disease. Gaior v. City of Pittsburgh*[26] recently allowed recovery here where death from this cancer-like disease followed a fall by six months.

H. *Systemic Lupus Erythematosus.* This collagen disease of the arteries was recently involved in litigation in *Smith v. Garside.*[27]

I. *Polyarteritis Nodosa.* Like Buerger's Disease and SLE, this condition is also a collagen disease and was the basis for compensation in a recent West Virginia case.[28]

J. *Rheumatoid Arthritis.* With other forms of arthritis there is virtually no etiological problem, but in the case of rheumatoid arthritis (and with rheumatic fever as well[29]) courts and compensation boards have been perplexed with issues of causation.[30]

K. *Parkinson's Disease.*[31] Several cases have allowed claims based upon the appearance of Parkinsonism after trauma or other occupational exposures, the leading case of which is *Gaffney v. Ind. Acc. Bd.*[32]

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[23] McCann Steel Co. v. Carney, 192 Tenn. 94, 237 S. W. 2d 942 (1951); In the Matter of Elizabeth Maypother, Employees' Comp. Appeal Bd, Docket No. 52-140, 1953, 12 NACCA L. J. 85.

[24] Besner v. Walter Kidde Nuclear Laboratories, 18 App. Div. 2d 952, 237 N. Y. S. 2d 585 (1963); Smith v. Young, 168 N. E. 2d 3, 109 Ohio App. 463 (1963) (uranium hexafluoride); Mahoney v. United States, 216 F. Supp. 523 (E. D. Tenn. 1962).

[25] Berman v. A. Werman & Sons, 14 App. Div. 2d 631, 218 N. Y. S. 2d 315 (1961) (benzol); Crowley's Case, 130 Maine 1, 153 Atl. 194 (1931) (carbon monoxide); *cf.* Zaefel v. E. I. DuPont de Nemours & Co., 284 App. Div. 2d 693, 134 N. Y. S. 2d 377 (1954) (*aplastic anemia* from benzol exposure).

[26] 188 Pa. Super. 371, 146 A. 2d 320 (1958). Medically, see Healy *et al.*, 64 Radiology 51 (1955).

[27] 355 P. 2d 849 (Nev. 1960). Medically, see Lawyers Medical Cyclopedia s. 15.45(A) (Supp. 1963).

[28] Vankirk v. State Comp. Comm'r, 144 W. Va. 447, 108 S. E. 2d 567 (1959). See the medical citation in the preceding footnote.

[29] See Brahdy, supra note 1, at 99; Leas, supra note 1, at 28.

[30] See Grice v. Dickerson, Inc., 127 S. E. 2d 722 (S. C. 1962) (leading case); Rysdon v. Wice, 34 Ill. App. 2d 290, 180 N. E. 2d 754 (1962); McCoy v. Bockow, 16 App. Div. 2d 722, 226 N. Y. S. 2d 867 (1962); Erbs v. Sheffield Farms Co., 272 App. Div. 1082, 74 N. Y. S. 2d 555 (1947). See Brahdy, supra Note 1, at 419.

[31] From a medical standpoint, see Brahdy, supra note 1, at 341; 4 Traumatic Med. & Surg. Atty. 622 (1961).

[32] 129 Mont. 394, 287 P. 2d 256 (1955). See also Conti v. Washburn Wire Co., 77 R. I. 31, 72 A. 2d 842 (1950); Ligenza v. White Foundry Co., 136 N. J. L. 436, 56 A. 2d 580 (1948); Fredholm v. Smith, 193 Minn. 569, 259 N. W. 80 (1935) (tort action for tremor resembling paralysis agitans which developed 3 months after auto accident).

L. *Lichen Planus.*[33] This obscure disease was involved in a recent New Jersey case in which a worker fell into some hot tar.[34]

M. *Erythema Multiforme.*[35] This is another rare disease of the allergic type, for which compensation was also awarded in a recent New Jersey case.[36]

N. *Dermatomyositis.* Two cases recently have involved this rare muscular disease, from Tennessee[37] and Pennsylvania.[38]

O. *Panniculitis.* This skin disease, similar to lichen planus, was recently the basis for a recovery in the compensation case of *Maryland Cas. Co. v. Miller.*[39]

P. *Dupuytren's Contracture.*[40] A number of cases have allowed recovery for the contraction of this condition, as against evidence from a faction of the medical profession that trauma, at least a single blow, cannot be an etiological factor.[41]

Q. *Other Conditions.* A number of other diseases or conditions should be mentioned as partially belonging within this list of diseases of obscure etiology: peptic ulcers;[42] Charcot's Disease;[43] regional enteritis and ulcerative colitis;[44] fibrositis (fibro-

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[33] See 6 Traumatic Med. & Surg. Atty. 609 (1962) for medical data.

[34] De Vito v. Mullen's Roofing Co., 72 N. J. Super. 233, 178 A. 2d 226, *cert. den.* 37 N. J. 222, 181 A. 2d 9 (1962).

[35] From the medical standpoint, see 6 Traumatic Med. & Surg. Atty. 592 (1962).

[36] Green v. Al Green Enterprises, Inc., 73 N. J. Super. 132, 179 A. 2d 151 (1962). See also In re Look's Case, 185 N. E. 2d 626 (Mass. 1962).

[37] Maryland Cas. Co. v. Miller, 358 S. W. 2d 316 (Tenn. 1962) (inhalation of tile dust).

[38] A trial court opinion is reported in 6 NACCA News Letter 106 (May 1963).

[39] See note 37.

[40] From the medical standpoint, see 1959 Med. Trial Tech. Annual 79; Larsen, 42-A J. Bone Jt. Surg. 919 (1960).

[41] Hall v. Ocean County, 72 N. J. Super. 395, 178 A. 2d 354 (1962); Sullivan v. Perez, 30 Misc. 2d 209, 220 N. Y. S. 2d 302 (Sup. Ct. 1961); Walsh v. Kotler, 46 N. J. Super. 206, 134 A. 2d 458 (1957); Hedlund v. United Exposition Decorating Co., 15 App. Div. 2d 972, 225 N. Y. S. 2d 613 (1962); Clarke v. B. C. Electric Ry., [1949] 1 W. W. R. 977, 2 W. W. R. 832 (B. C. C. A.).

[42] See Wallace v. Crofton Colliery Pty. Ltd., [1956] W. C. R. 32. From the medical viewpoint, see Brahdy, supra note 1, at 225; Leas, supra note 1, at 23.

[43] See Brahdy, supra note 1, at 412; 4 Lawyers Med. Cyc. 32:37 (1960).

[44] See Brahdy, supra note 1, at 246; Huff *et al.*, 180 J. A. M. A. 491 (1962).

sis);[45] exophthalmic goiter;[46] herpes zoster;[47] tuberculosis;[48] and cerebral palsy and other prenatal injuries or birth defects.[49]

Use of a Sequence-of-Events Test

Analysis of the cases in the preceding section indicates that in some cases no medical testimony on causal relation was offered and in others what expert testimony there was offered was by the very nature of the problem speculative and indecisive. To allow a litigant to make a submissible case in this situation, many of the courts in the cases cited above utilized what might be called a "sequence-of-events" test. By this they substitute for medical proof or supplement uncertain medical testimony with a mixture of lay knowledge and circumstantial evidence. Once a court takes this approach the burden of going forward is in effect shifted to the defendant to show an absence of causal relation.

But the proper use of a sequence-of-events or progress-of-the-case test is not without its judically created requirements. Upon analysis of the cases it becomes apparent that the courts have been applying certain criteria or insisting on the proof of the occurrence of certain basic events in order to determine causation. These general factors, which might be called the "Ewing Postulates" [50] for the entire obscure etiology field, can be listed as follows:

1—good health and body integrity before the accident;

2—trauma or other exposure of a nature, severity and locality not inconsistent with later development of the disease;

3—proper immediate effects of both a subjective and objective nature;

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[45] See Pearce v. Rourke [1951] 1 W. W. R. (N. S.) 305 (Alta.).

[46] See Brahdy, supra note 1, at 460; Leas, supra note 1, at 28.

[47] See 1960 Med. Trial Tech. Annual 93, citing cases.

[48] While there is no problem of etiology or the role of trauma here, the courts have tended to approach the problem similarly to that above. See, Ernest v. Boggs Lake Estates, Inc., 12 N. Y. 2d 414, 190 N. E. 2d 528 (1963); Sentilles v. Inter-Caribbean Shipping Corp., 361 U. S. 107 (1959); Hazelwood v. Hodge, 357 S. W. 2d 711 (Ky. 1961); Combustion Engineering Co. v. Burke, 357 S. W. 2d (Tenn. 1962); Vidrine v. New Amsterdam Cas. Co., 137 So. 2d 666 (La. App. 1962); Poneitowcki v. Harres, 200 Wis. 504, 228 N. W. 126 (1929); Greave's Case, 186 N. E. 2d 605 (Mass. 1962).

[49] Involving cerebral palsy, see Seattle-First Nat'l Bank v. Rankin, 58 Wash. 2d 288, 367 P. 2d 835 (1962); 4 NACCA News Letter No. 1 (Jan. 1961) p. 23; 4 *id.* No. 4 (April 1961) p. 21. Generally on prenatal injuries and congenital defects, see Note, The Impact of Medical Knowledge on the Law Relating to Prenatal Injuries, 110 U. Pa. L. Rev. 554 (1962).

[50] Reference is made to the postulates on the causation of cancer put forth by Dr. Ewing, and discussed by the references in note 22 supra.

4—bridging symptoms between the time of the accident and of the appearance of the disease with the interval being neither too long nor too short;

5—diagnosis of the disease, presenting a not inconsistent onset, site and course, combined with the elimination of other possible causes.[51]

The sequence test has often been criticized as embodying a logical fallacy, *post hoc ergo propter hoc.* That is, just because the disease follows injury it cannot be said to be causally related to it. Critics inquire how law can reach a decision on a medical issue before medicine has.[52] The purpose of a trial, however, is not to determine some pure medical principle for the purpose of enlightening indecisive professional brethren. It is to decide a dispute between parties to a particular case, on the basis of the evidence therein presented. The burden is upon the moving party to produce a preponderance of the evidence, of course, not absolute medical certainty. It would probably be more unjust to deny all claims until medicine finally arrived at a consensus on causation than to allow compensation to all those who can fit their facts within a respectable theory of medicine, even if it is a minority.[53] And, as has been astutely remarked, "Perhaps the doctor himself is to blame in part because he has failed to realize the social purpose for using a scientific theory to prove in a court before a jury what 'caused' an accident." [54]

Proof Required in Obscure Etiology Cases

Expert medical testimony is desirable in cases involving diseases of obscure etiology, if only to show that trauma *could* be a factor in the causation or precipitation of a disease. Numerous cases have allowed medical testimony phrased in terms of possibilities to combine with circumstantial evidence to create a pre-

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[51] Generally see Brahdy, supra note 1, at 5. Note that if the issue is not direct causation, but aggravation, some modification of these criteria must be made. For example, for *1* the courts will properly substitute the proof of the existence of a pre-existing disease.

[52] Stated Judge Friendly recently, "So long as the decision of complex medical issues is left to laymen, it must be expected that juries will occasionally provide news for doctors." Evans v. S. J. Grove & Sons Co., 315 F. 2d 335 (2d Cir. 1963).

[53] As was stated in the Brett case, supra note 15, courts cannot allow limits of scientific knowledge to prevent the awarding of damages in just claims.

[54] Stason et al., Atoms and The Law 427 (1959); *cf.* Horovitz, Workmen's Compensation: Half Century of Judicial Developments, 41 Neb. L. Rev. 1, 42-46 (1962).

ponderance.[55] Circumstantial evidence is used, in effect, to raise the *possibility* created by medical evidence into a *probability*. To facilitate this approach more and more courts are allowing doctors to speak in terms of possibilities ("might" or "could") rather than probabilities or "reasonable medical certainty."[56] Nor is medical opinion to be struck down as "speculative" merely on the basis that there is no medical certainty as to underlying principles.[57] Even though the doctor must to a certain extent speculate, he is aided by his knowledge and appreciation of the general factors in the post-traumatic picture which have normal deleterious tendencies, including injury to tissue, devitalization of the region injured, decreased resistance and increased susceptibility of the system involved, the body and the psyche. These factors make at least a partial basis for an opinion. It should be noted that it also has been frequently held that where there is some medical evidence but it is inconclusive, the jury can make its own inferences of causation.[58]

It is also quite possible for an award to be made without any medical testimony being presented at all, based solely upon the sequence-of-events test. The leading case here is *Valente v. Bourne Mills*,[59] a workmen's compensation action for cancer, in which it is stated:

> [M]edical evidence, although highly desirable, is not always essential for an injured employee to make out a *prima facie* case, especially if the testimony is adequate, un-

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[55] *E.g.*, Walters v. Smith, 222 Md. 62, 158 A. 2d 619 (1960) (compensation; neurological disease); General Motors v. Freeman, 164 A. 2d 686 (Del. 1960) (compensation; eye damage); Blackfoot Coal & Land Corp. v. Cooper, 121 Ind. App. 313, 95 N. E. 2d 639 (1950) (compensation; cancer); Charlton Bros. v. Garrettson, 188 Md. 85, 51 A. 2d 642 (1947) (tort; leading case); Lee v. Blessing, 131 Conn. 569, 41 A. 2d 337 (1945) (tort; cancer).

[56] See, Markus, Semantics of Traumatic Causation, 12 Clev-Mar. L. R. 233 (1963). For a general discussion see 29 NACCA L. J. 195, 200-04 (1963); in addition see the recent cases of Ernest v. Boggs Lake Estates, Inc., note 48 supra (opinions not to be rejected because dcotors fail to use the words preferred by lawyers or judges; whole record to be examined to see if it presents substantial evidence); Healy v. Nordhaus, 188 N. E. 2d 277 (Ill. App. 1963).

[57] See Boyd v. Young, 193 Tenn. 272, 246 S. W. 2d 10 (1951) (compensation; acceleration of cancer); Pittman v. Pillsbury Flour Mills, 234 Minn. 517, 48 N. W. 2d 735 (1951) (compensation; single trauma cancer); Quaker Oats case, note 20 supra. See Averbach, supra note 3.

[58] See Grice case, supra note 30, an excellent statement; Smith v. Stevens, supra note 10; Menarde v. Philadelphia Trans. Co., 376 Pa. 497, 103 A. 2d 681 (1954) (tort; cancer); Comeau v. Beck, 319 Mass. 17, 64 N. E. 2d 436 (1945) (tort; miscarriage).

[59] 77 R. I. 274, 75 A. 2d 191 (1950).

> disputed and unimpeached. Thus where, as in the instant case, injury appears in a bodily member reasonably soon after an accident, at the very place where the force is applied, and with symptoms observable to the ordinary person, there arises, in the absence of believed testimony to the contrary, a natural inference that the injury, whatever may be the medical name, was the result of the employment. . . . If the reasonable probabilities flowing from the undisputed evidence disclose a progressive course of events beginning with an external accident in which each succeeding happening including the injury appears traceable to the one that preceded it, medical evidence is not essential for an injured employee to make out a prima facie case.[60]

Nor are the cases in which there has been a recovery without medical evidence limited to compensation. In the recent case of *Wilhelm v. State Traffic Safety Comm.*[61] inexplicable depigmentation of the skin following trauma was involved. Stated the court:

> There are, unquestionably, many occasions where the causal connection between a defendant's negligence and a disability claimed by a plaintiff does not need to be established by expert testimony. Particularly is this true when the disability develops coincidentally with, or within a reasonable time after, the negligent act, or where the causal connection is clearly apparent from the illness itself and the circumstances surrounding it, or where the cause of the injury relates to matters of common experience, knowledge, or observation of laymen.[62]

In summary, it has usually been no bar to a claim that the etiology of the disease involved in the case is obscure or that the

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[60] 75 A. 2d at 194 (1948). See also Tonkovich v. Dept. Labor & Ind., 31 Wash. 2d 220, 195 P. 2d 638 (compensation; cancer); Southern S.S. Co. v. Norton, 41 F. Supp. 103 (E. D. Pa. 1940) (cancer). Larson suggests a partial justification for allowing compensation boards to determine etiology where no medical evidence is given: the boards are relying in part upon their own knowledge of medicine, gained through experience. 2 Larson, Workmen's Compensation 299-303 (1952).

[61] 299 Md. 406, 185 A. 2d 715 (1962).

[62] 185 A. 2d at 719. An alternative source of proof in obscure etiology cases should be noted since it has been used at times to strengthen other evidence or to itself meet the burden of proof. This is statistical or physical evidence. See, *e.g., Travelers Ins. Co. v. Donovan,* 125 F. Supp. 261 (D. D. C. 1954) (tuberculosis; high incidence in area where claimant worked was evidence that contraction was work connected); Gilbert Pacific Inc. v. Donovan, 198 F. Supp. 297 (E. D. La. 1961) (same); Wallace case, note 42 supra (physics used to explain cause of peptic ulcer formation); but see Miller v. National Cabinet Co., 8 N. Y. 2d 277, 168 N. E. 2d 811 (1960) (rejecting statistical evidence).

role of trauma is not yet medically certain. While difficult problems of proof are involved in this area, the action is basically the same as any case embodying a disputed medical point. Courts and compensation boards must be cautious in applying a sequence-of-events test because what may appear at times to be everyday cause and effect relationship may be totally discredited scientifically. By application of the criteria outlined above and by insistence upon the production of competent medical testimony wherever applicable, the courts will do well, however, to continue to allow actions to be maintained for the contraction of diseases, as to the cause of which medicine is presently uncertain.