WORKERS' COMPENSATION.

No. 96 of 1973.

AN ACT to amend the Workers' Compensation Act, 1912-1970.

[Assented to 27th December, 1973.]

BE it enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Legislative Council and the Legislative Assembly of Western Australia, in this present Parliament assembled, and by the authority of the same, as follows:-

(1) This Act may be cited as the Workers' short title Compensation Act Amendment Act, 1973.

(2) In this Act the Workers' Compensation Act, Reprinted as approved for 1912-1970 is referred to as the principal Act.

reprint 2nd July,

(3) The principal Act as amended by this Act may be cited as the Workers' Compensation Act. 1912-1973.

Amendment to section 4. (Effect of amendments on compensation.)

- 2. Section 4 of the principal Act is amended—
 - (a) by repealing and re-enacting subsection (4) as follows—
 - (4) Notwithstanding any rule of law or construction, or a provision in a policy of insurance mentioned in subsection (1) of section 13 of this Act, or any other agreement to the contrary, such a policy is deemed to include—
 - (a) a provision that, where during the currency of the policy the rates or amounts of payments to workers under this Act and the total liability of employers in respect thereof are amended, the employer under the policy shall be insured in respect of liability for the amended rates or amounts; and
 - (b) a provision that, where during the currency of the policy the Premium Rates Committee, pursuant to section 30 of this Act, alters the maximum premium rate for the risks insured under the policy, the premium payable under the policy shall be altered to the extent such maximum premium rate is altered.;

and

(b) by repealing subsections (5) and (6). .

Amendment to section 5. (Interpretation.)

- 3. Section 5 of the principal Act is amended—
 - (a) by adding after the section number "5." the subsection designation "(1)";
 - (b) by deleting the interpretation "Basic wage";
 - (c) by adding after the interpretation "Dependents" an interpretation as follows—

"Disabled from earning full wages" means rendered less able to earn full wages. (d) by adding after the interpretation "Outworker" an interpretation as follows—

> "Prescribed amount" means the amount to the nearest dollar ascertained by multiplying by two hundred and eight the amount specified in the estimate, published each year by the Commonwealth Statistician, of the average weekly earnings per employed male unit for the June quarter in Western Australia. ;

- (e) by adding after the interpretation "specialist" an interpretation as follows—
 - "The Chairman" means the person appointed to the office of the Chairman of the Board, and includes a person so appointed to act in the place and during the absence of the Chairman, while that person is so acting. :
- (f) by substituting for the interpretation "Widow" or "Wife" an interpretation as follows-
 - "Widow" or "Wife" in relation to compensation payable in respect of the death of a worker includes a woman who, although not legally married to him-
 - (a) lived with him on a permanent and bona fide domestic basis immediately before his death, if he leaves any dependant who is the child of the union between him and the woman;

or

(b) lived with him on such a basis for not less than three years immediately before his death, if he does not leave any such dependant.; and

- (g) by adding subsections as follows—
 - (2) In this Act "worker" includes a clergyman of the Church of England. that is, a priest ordained within the Church of England and licensed to work under the authority of the Bishop of the Diocese within which he is employed, under terms and conditions laid down by the Bishop with the approval of the governing body of the Church in the Diocese, and, irrespective of the Diocese in which he is so employed, the Archbishop of the Church of England Diocese of Perth is, for the purposes of this Act. deemed to be the employer of such a clergyman.
 - (3) At the request of the governing body of any other church, the Minister—
 - (a) may, by notice published in the Government Gazette, declare that in this Act "worker" includes a clergyman, as defined in the notice, of that church and, if the Minister so declares, he shall also declare, in the same notice, who is, for the purposes of this Act. deemed to be the employer of such a clergyman, and thereupon the notice shall have effect according to its terms as if they were provided in this Act; and
 - (b) may at any time by subsequent notice so published cancel or amend the firstmentioned notice and thereupon the subsequent notice shall have effect according to its terms as if they were provided in this Act.

- Section 7 of the principal Act is amended—
 - (a) by deleting the word "or" at the end of employers to workers for subparagraph (i) of paragraph (a) of sub-injuries.) section (1a):

Amendment to section 7.

(b) by substituting for the word "and" at the end of subparagraph (ii) of paragraph (a) of subsection (1a) a passage as follows—

or

- (iii) between any camp or place, where the worker is required by the terms of his employment, or is expected by his employer, to reside temporarily or where it is reasonably necessary or convenient that he shall temporarily reside for any purpose of his employment, and the worker's place of abode when not so residing, if the journey is undertaken in accordance with the terms and conditions of his employment, and
- (c) by repealing subsection (1c);
- (d) by substituting for the words "ten thousand eight hundred and eighty-one dollars compensation", in lines seven and eight of paragraph (f) of subsection (3), the words "the prescribed amount"; and
- (e) by deleting subparagraph (i) of paragraph (h) of subsection (3).
- The principal Act is amended by adding after Addition of section 7A section 7 sections as follows—

7A. If compensation under this Act is compensation for noise aimed in respect of the injury known as noise induced hearing loss. claimed in respect of the injury known as noise induced hearing loss, then, unless the injury is one for which either in whole or in part compensation has previously been paid, that compensation shall be assessed as if the whole of the loss of function arising from that injury occurred immediately before the notice of that injury was given.

Ascertainment of percentage hearing loss.

- 7B. (1) Subject to this section, in ascertaining, for the purposes of this Act, the percentage of the diminution of hearing in respect of noise induced hearing loss of a worker who is over the prescribed age, it shall be conclusively presumed that his loss of hearing is, to the extent of the prescribed number of decibels for each complete year of his age in excess of the prescribed age, to be attributed to presbycusis.
 - (2) For the purposes of this section—
 - (a) the prescribed age is fifty years; and
 - (b) the prescribed number of decibels is one-half or, where some other number is prescribed, the number so prescribed.
- (3) Regulations made for the purposes of paragraph (b) of subsection (2) of this section may prescribe different numbers of decibels in respect of different methods of ascertaining the extent of diminution of hearing, and any number thereby prescribed may be or include a fraction.
- (4) Nothing in this section applies in a case of total loss of hearing of either ear.

Amendment to section 8. (Compensa-tion of worker dying from or affected by certain industrial diseases.)

- Section 8 of the principal Act is amended—
 - (a) by substituting for the word "Where", in line one of subsection (1c), the word "Whenever":
 - (b) by adding after subsection (1d) subsections as follows-

(1da) On a reference under section (1d) of this section any duly qualified medical practitioner who has examined or treated the worker on his own behalf or has examined him on behalf of the employer may attend and 1973.7

make oral submissions to the Board, and, where such a medical practitioner does so attend the Mines Medical Officer shall so certify to the Registrar, and the practitioner shall be paid from the Fund such witness fee as he would have been entitled to receive if he had attended the Workers' Compensation Board to give evidence in a hearing before that Board.

- (1db) On a reference under subsecthis (1d) \mathbf{of} section. Board, having examined the worker clinically, scrutinised such x-ray films as it may think fit, considered such oral submissions as have been made pursuant to subsection (1da) of this section, and perused such certificates of other duly qualified medical practitioners as either party may in person or by his solicitor or agent tender to that Board, shall thereupon consider and determine the following questions-
 - (a) is the worker suffering from pneumoconiosis or mesothelioma?
 - (b) if so, is he thereby disabled from earning full wages?
 - (c) for what type of employment (if any) is the worker fit?

and the determination thereon of that Board or a majority of its members shall be final and conclusive and binding on the worker, on his employer, and on any tribunal hearing a matter in which any such determination is relevant. ;

(e) by substituting for the words "ten thousand eight hundred and eighty-one dollars", in lines 12 and 13 of subsection (14), the words "the prescribed amount"; and

- (d) by adding after subsection (16) a subsection as follows—
 - (17) In subsections (1) and (1a) of this section "at the place of his employment" means the place where the worker was last employed in the employment to the nature of which his Third Schedule disease is, or was, due. .

Addition of sections 8A, 8B, and 8C. 7. The principal Act is amended by adding after section 8 a section as follows—

Special provision for cardiovascular and cerebrovascular "accidents". 8A. Where a worker is disabled from earning full wages by a cardio-vascular or cerebro-vascular "accident" occurring whilst he is actually engaged in the performance of his ordinary work, he shall be deemed to have suffered personal injury by accident within the meaning of this Act and his death if occurring at the time of such accident or within three months thereafter shall, unless the employer proves the contrary, be deemed to have resulted from such injury for the purposes of paragraph (a) of clause 1 of the First Schedule to this Act.

Repeal of section 10.

8. Section 10 of the principal Act is repealed.

Addition of sections 12A, 12B, 12C, 12D, 12E, and 12F.

9. The principal Act is amended by adding after section 12 sections as follows—

Commencement of weekly payments. 12A. (1) Except as provided in this section, the first of the weekly payments for total or partial incapacity under this Act shall be made not later than two weeks after the worker has provided evidence of his incapacity and all the criteria as contained in section 12 of this Act have been met, which evidence shall be in the form of a certificate from a medical practitioner registered under the Medical Act, 1894, as amended from time to time, and subsequent weekly payments shall be made on the employer's usual pay days.

- (2) An employer who disputes his liability to pay compensation under this Act may, within the period of two weeks referred to in subsection (1) of this section or such extended time as may be ordered by the Board or Chairman, take out an application to the Board for an order that the subsection shall not apply and the application shall be heard and determined as an interlocutory proceeding and the application of the subsection shall be suspended, pending the results of that hearing and determination.
- (3) On the hearing of the application referred to in subsection (2) of this section the Board—
 - (a) may dismiss or adjourn the applicacation on such terms as it thinks fit and if it dismisses the application it may make such order as to the modification of the application of subsection (1) of this section as it thinks fit and thereupon subsection (1) of this section shall apply and have effect accordingly; or
 - (b) if it considers that a genuine dispute exists concerning the liability of the employer to pay compensation under this Act, may order that subsection (1) of this section shall not apply and thereupon that subsection shall not apply.
- (4) Where the first of weekly payments for total or partial incapacity under this Act has not been made in accordance with subsection (1) of this section and the employer has not made an application to the Board in accordance with subsection (2) of this section, the worker may make an application to the Board for such weekly payments to be made and the application shall be heard and determined as an interlocutory proceeding.

- (5) On the hearing of an application referred to in subsection (4) of this section the evidence of incapacity provided by the worker to the employer shall be produced to the Board. which-
 - (a) if it considers that the evidence is satisfactory for the purposes of subsection (1) of this section, may order that weekly payments including arrears to the date of the hearing shall be paid out of the Fund and shall with an additional ten per cent. of the amount of such payments be recovered by the Board for the Fund from the employer: or
 - (b) if it considers that the evidence is not satisfactory for the purposes of subsection (1) of this section, may dismiss or adjourn the application on such terms as it thinks fit.
- (6) The fact that an application has been dismissed under subsection (3) or subsection (5), as the case may be, of this section shall not be taken into account by the Board in any other proceedings under this Act.

Unlawful discontinuance of weekly payments.

(1) Where weekly payments of compensation for total or partial incapacity are made to a worker under this Act they shall not be discontinued or diminished without the consent of the worker except where the worker has returned to work or a medical practitioner registered under the Medical Act, 1894, as amended from time to time, has certified that the worker has wholly or partially recovered or that the incapacity is no longer a result of the injury and a copy of the certificate (which shall set out the grounds of the opinion of the medical

practitioner) together with at least twenty-one clear days' prior notice of the intention of the employer to discontinue the weekly payments or to diminish them by such amount as is stated in the notice has been served by the employer upon the worker and unless within that period the worker has not made an application to the Board under subsection (2) of this section.

- (2) A worker who disputes the right of his employer to discontinue or diminish the weekly payments referred to in subsection (1) of this section may within the period of twenty-one days referred to in that subsection make an application to the Board for an order that the weekly payments shall not be discontinued or diminished and the application shall be heard and determined as an interlocutory proceeding.
- (3) Upon the hearing of an application referred to in subsection (2) of this section the Board mav—
 - (a) adjourn the application on such terms as it thinks fit;
 - (b) dismiss the application in which case the weekly payments may be discontinued or diminished, as the case may be; or
 - (c) make such order as to the continuance of the weekly payments as it thinks fit.
- (4) If any weekly payments are discontinued or diminished otherwise than in accordance with this section the employer shall be guilty of an offence against this Act.

Penalty: Two hundred dollars.

(5) A conviction for an offence that is a contravention of subsection (4) of this section shall not affect any liability for the making of weekly payments of compensation under this Act.

Effect on annual leave and long service leave.

12C. Compensation shall be payable accordance with the provisions of this Act to a worker in respect of any period of incapacity notwithstanding that the worker has received or is entitled to receive in respect of such period any payment, allowance, or benefit for annual leave or long service leave under any Act of the Commonwealth or of the State, any award or industrial agreement under any such Act, or any other agreement applicable to his employment, and the amount of compensation so payable shall be the amount which would have been payable to the worker had he not received or been entitled to receive in respect of such period any such payment, allowance or benefit.

Effect on public holidays.

Notwithstanding any provision that applies to or in relation to the employment of a worker apart from this Act, where during any period in respect of which weekly payments are payable pursuant to this Act a public holiday occurs, an employer shall not be liable to make any payment to the worker in respect of that holiday other than payment for that day as a part of those weekly payments.

Recovery of cost of services rendered.

- Where a person or authority has rendered to or provided for a worker any services for the cost of which the employer is liable to pay compensation to the worker under this Act—
 - (a) the employer may pay to that person or authority the whole or any part of the amount owing to him or it and such a payment shall to the extent of the amount paid, be a discharge of the liability of the employer to the worker

under this Act and of the liability of the worker to that person or authority for the services: and

- (b) if the whole or any part of the amount owing to that person or authority is not paid he or it has, in respect thereof, the same rights and remedies against the employer as the worker has.
- **10.** Section 25 of the principal Act is amended—

- (a) by substituting for the word "seven", in (Workers' Compensaline four of subsection (4) the word "eight"; tion Board.)
- (b) by substituting for the word "Each", being the first word in subsection (13), the passage "The Chairman shall retire from his office upon attaining the age of seventy years, and each nominee";
- (c) by adding after subsection (13) a subsection as follows—
 - (13a) On and after the date of the coming into operation of the Workers' Compensation Act Amendment Act, 1973 the Chairman—
 - (a) shall be entitled to such salary, travelling and other allowances reimbursements, leave absence, pension, and rights under the Superannuation and Family Benefits Act, 1938 as he would be if service as Chairman of the Workers' Compensation Board on and after that date were service as a District Court Judge, other than the Chairman of Judges, appointed pursuant to the District Court of Western Australia Act, 1969; and

- (b) shall be entitled to the designation "Judge".; and
- (d) by adding after the word "each", in line one of subsection (14) the word "nominee".
- Amendment to s. 29.
- Subsection (7) of section 29 of the principal (Jurisdiction Act is amended by substituting for paragraph (aa) a paragraph as follows-
 - (aa) where the Board considers that an injury to a worker that is compensable under this Act has resulted in his permanent total incapacity for work, making, unless an order for redemption of weekly payments by payment of a lump sum has already been made under this Act in respect of the injury, such order as to the total liability of the employer for weekly payments as the Board thinks proper in the circumstances:

Amendment to section 30 (Premium Rates Committee.)

- Section 30 of the principal Act is amended—
 - (a) by substituting for the words "and due", in line two of subparagraph (iii) of paragraph (b) of subsection (1), the passage ", due, and which may become due";
 - by substituting for the words "and due", in line two of subparagraph (v) of paragraph (b) of subsection (1), the passage ', due, and which may become due";
 - (c) by substituting for subparagraph (vi) of paragraph (b) of subsection (1), a subparagraph as follows—
 - (vi) the total amount of payments made during that period or which may be made subsequent to that period by the Board pursuant to the provisions of this Act to workers who have sustained personal injury by accident during that period in respect of the employer's liability for which no insurance exists:

- (d) by substituting for the word "and" after subparagraph (vii) of paragraph (b) of subsection (1) a passage as follows—
 - (viia) the total amount of payments which may subsequent to the expiration of that period be made by all insurers in respect of injuries by accident received by workers during or prior to that period by reason of amendment to the rates or amounts of payments to workers under this Act and the total liability of employers in respect thereof: and :

and

(e) by substituting for the passage "determination.", in line three of paragraph (e) of subsection (1a), a passage as follows—

> or pursuant to subsection (1b) of this section.

> (1b) As soon as is practicable after any alteration in the prescribed amount, the Premium Rates Committee shall consider the effect of the alteration on the maximum premium rates determined pursuant to this section and may, on the basis mentioned in paragraph (b) of subsection (1) of this section, make such alterations to those maximum premium rates as the Committee thinks necessary or desirable.

13. The First Schedule to the principal Act is Amendment amended—

- (a) by substituting for item (I) of subparagraph (i) of paragraph (a) of clause 1 an item as follows-
 - (I) in respect of all those dependants, if any, who are not of the kind referred to in item (II), (III), or (IV) of this subparagraph a sum

equal to eighty-five per cent. of the prescribed amount, less the amount of any lump sum paid in redemption of weekly payments for the injury under this Act; ;

- (b) by substituting for the words "three dollars fifty cents"—
 - (i) in line five of item (II) of subparagraph (i) of paragraph (a) of clause 1; and
 - (ii) in lines seven and eight of item (III) of subparagraph (i) of paragraph (a) of clause 1,

the words "seven dollars fifty cents";

(c) by substituting for the passage "sooner," at the end of item (III) of subparagraph (i) of paragraph (a) of clause 1, a passage as follows—

sooner;

- (IV) in respect of each of those dependants who is a child, or step child, of any age, whether a full time student or otherwise who, by reason of circumstances the Board in its absolute discretion decides, should receive continued support, the sum of seven dollars fifty cents weekly, payable from the Fund but recoverable for the fund by the Board from the employer or insurer in such manner as may be prescribed, until such time as the Board orders, ;
- (d) by substituting for the words "two thousand six hundred and sixty-five dollars", in the second last and last lines of subparagraph (i) of paragraph (a) of clause 1, the passage "a sum equal to twenty-five per cent. of the prescribed amount":

(e) by substituting for the passage beginning with the word "incapacity", in line three of paragraph (c) of clause 1 and continuing to immediately before the words "Provided that", being the commencing words in the proviso to that paragraph, a passage as follows-

incapacity-

- (i) in the case of total incapacity, an amount equal to the weekly earnings of the worker computed in accordance with clause 2 of this Schedule: or
- (ii) in the case of partial incapacity, the amount by which the weekly earnings as so computed exceed the weekly amount which he is earning or is able to earn in some suitable employment or business after the accident,

but the total liability of the employer in respect of weekly payments shall not exceed the prescribed amount unless the Board so orders under paragraph (aa) of subsection (7) of section 29 of this Act. :

- (f) by substituting for the words "one thousand six hundred and thirty two dollars", in lines twenty-one and twenty-two of subparagraph (i) of paragraph (c) of the proviso to paragraph (c) of clause 1, the words "a sum equal to ten per cent, of the prescribed amount";
- (g) by substituting for the words "one hundred and sixty-three", in lines five and six of subparagraph (ii) of paragraph (c) of the proviso to paragraph (c) of clause 1, the words "two hundred and fifty";

- (h) by substituting for the words "one hundred and sixty-three", in lines ten and eleven of subparagraph (iv) of paragraph (c) of the proviso to paragraph (c) of clause 1, the words "two hundred and fifty":
- (i) by substituting for clause 2 a clause as follows-
 - 2. For the purposes of this "weekly earnings" means the amount of the ordinary wage or salary (including any over award payment) the worker would have received for the ordinary hours he would have worked, if he were not incapacitated for work as a result of the injury. :
- (j) by deleting paragraph (a) of clause 3;
- (k) by adding after the word "redemption", in the fifth last line of clause 10, the passage "and, where the Board has ordered that the total liability of the employer in respect of weekly payments shall exceed the prescribed amount, the Board shall be satisfied that the employer consents to redemption by payment of a lump sum"; and
- (1) by substituting for the words "maximum sum of ten thousand eight hundred and eighty-one dollars" in paragraph (i) of clause 11, the passage "prescribed amount unless the Board orders, under paragraph (aa) of subsection (7) of section twentynine of this Act, that the total liability of the employer shall exceed the prescribed amount, in which case the lump sum shall be such a sum as the Board thinks proper in the circumstances.

14. The principal Act is amended by repealing substituted and re-enacting the Second Schedule as follows—— Schedule.

SECOND SCHEDULE.

TABLE.

	TABLE.		
Item	. Nature of Injury.	Ratio which the sum payable herein bears to the prescribed amount per	
	EYES		%
1.	Total loss of sight of both eyes		100
2.	Total loss of sight of an only eye		100
3.	Total loss of sight of one eye		50
4.	Total loss of sight of one eye and seriodiminution of the sight of the other eye	ous 	75
5.	Loss of Binocular vision		50
6. 7.	HEARING Total loss of hearing SPEECH Total loss of power of speech		75 75
	BODY AND MENTAL		
8.	Permanent and incurable loss of men capacity resulting in total inabilitity work		100
9.	Total and incurable paralysis of the lim or of mental powers	ibs 	100
	SENSORY		
10.	Total loss of sense of taste and smell	.,	50
11.	Total loss of taste		25
12.	Total loss of smell		20

SECOND SCHEDULE—continued.

Item.	. Nature of Injury.	the	atio which the sum payable herein bears to e prescribed mount per centum.
	ARM		%
13.	Loss of arm at or above elbow		90
14.	Loss of arm below elbow		80
	HAND		
15.	Loss of both hands		100
16.	Loss of a hand and a foot		100
17.	Loss of hand or thumb and four fingers		80
18.	Loss of thumb	••••	35
19.	Loss of forefinger		25
2 0.	Loss of middle finger		20
21.	Loss of ring finger		20
22.	Loss of little finger		14
23.	Total loss of movement of joint of thumb		15
24.	Total loss of distal phalanx of thumb		17
25.	Total loss of portion of terminal segme of thumb involving one-third of its fler surface without loss of distal phalanx		15
26.	Total loss of distal phalanx of forefinger	••••	11
27.	Total loss of distal phalanx of any oth finger	er 	9
	LEG		
28.	Loss of leg at or above knee		90
29.	Loss of leg below knee		80

SECOND SCHEDULE—continued.

Item	. Nature of Injury.	t l the ar	tio which the sum payable herein pears to prescribed nount per centum.
1	PET		%
30.	Loss of both feet		100
31.	Loss of foot		75
32.	Loss of great toe		25
33.	Loss of any other toe		10
34.	Loss of two phalanges of any other too	·	8
35.	Loss of phalanx of great toe		11
36.	Loss of phalanx of any other toe		7
	MISCELLANEOUS		
37.	Loss of genitals		50
38.	Severe facial scarring or disfigurement to maximum of		80
39.	Severe bodily, other than facial, scarring disfigurement to a maximum of	_	50

Provided that in the application of the Table the following shall apply—

- (a) If an eye or foot or other member be deemed lost or permanently and wholly useless or a finger has lost two joints then it constitutes the total loss of the eye, foot, member or finger.
- (b) Except in the case of eyes, determination of a percentage of loss should not be made while using artificial aids.
- (c) Determination of loss of sight shall be made on a corrective basis except in the case of binocular vision. .

to Third Schedule

- 15. The Third Schedule to the principal Act is amended—
 - (a) by substituting for the word "carcases", in the description of process opposite the description of disease "Anthrax", the passage "carcases; loading and unloading or transport of merchandise containing Anthrax organisms";
 - (b) by adding immediately above the description of disease "Poisoning by carbon bisulphide", a description of disease as follows--

Poisoning by a homologue of benzol and by adding, so as to appear directly opposite that last mentioned description of disease, in the column "Description of Process", a description of process follows---

Any process involving the use of a homologue of benzol.;

(c) by adding immediately below the description of disease "Poisoning by carbon bisulphide", a description of disease as follows—

> Poisoning by a halogen derivative of a hydrocarbon of the aliphatic series ...

and by adding, so as to appear directly opposite that last mentioned description of disease, in the column "Description of Process" a description of process follows---

Any process involving the use of a halogen derivative of a hydrocarbon of the aliphatic series.;

(d) by substituting for the passage "mineral oils, pitch, tar or tarry compounds", in the description of disease beginning with the words "Epitheliomatous cancer", and in the description of process directly opposite that description of disease, the passage, "tar,

pitch, bitumen, mineral oil, paraffin, or the compounds, products or residues of those substances" in each case; and

(e) by adding at the end of the column "Description of Disease" descriptions of diseases, respectively, as follows—

Noise induced hearing loss ...

Pathological manifestation due to—

- (a) radium and other radioactive substances;
- (b) X-rays.

and by adding, so as to appear, respectively, directly opposite those descriptions of diseases, in the column "Description of Process", descriptions of process, respectively, as follows—

Any process involving exposure to noise.

Any process involving exposure to the action of radium, radioactive substances, or X-rays. .