Scientific World Rocked By Canadian's Discovery

By JOHN E. BIRD

OTTAWA (CP)—A 30-year-old Canadian has rocked the world of chemistry by disproving a scientific theory that has been accepted since the turn of the century.

Dr. Neil Bartlett, an assistant professor in the chemistry department of the University of British Columbia, has discovered that not all the rare, so - called inert gasses in the atmosphere are inert.

He has found that the gas xenon can be combined with another gas to form a stable compound—a new chemical substance which scientists have have said could not exist. As a result of this discovery, it will be necessary to rewrite sections of high school chemistry textbooks stating that rare gases will not react chemically.

A yellow compound produced by Dr. Bartlett by combining xenon with platinum hexafluoride vapor does not have any immediate practical value. However, the discovery opens a broad new area of research into the binding together of various chemicals to form stable compounds.

HAD NRC GRANT

Dr. Bartlett produced the compound while doing research at UBC under a National Research Council grant. His work inspired a major research project at the Argonne National Laboratory, Argonne, Ill., where scientists have gone a step farther, producing a crystal by combining xenon with fluorine.

A native of England, Dr. Bartlett joined the UBC chemistry faculty in 1958 after graduating from the University of Durham.

One of the first things taught in high school chemistry student is that the rare gases in the atmosphere are inert. They are told that the most characteristic chemical property of helium, neon, argon, krypton, xenon and radon, a radioactive gas, is a total absence of chemical reaction.

NRC scientists said this has been accepted as fact ever since the rare gases were discovered. As a result scientists never bothered to do any research work in recent years to disprove the theory until Dr. Bartlett became curious.

His discovery was taken up by the Argonne Laboratory which gives Dr. Bartlett credit for producing the first true compound by combining so-called inert gas with another chemical.

NRC scientists said the discovery represents a minor revolution in the field of chemistry.

DAILY MARKETS

TORONTO

(Continued from page 15)

Sant Ant	6850	43	40	40	—8
Sand Riv	500	4½	4½	4½	— ½
Satellite	12000	17	16	17	+1
Sherritt	8790	305	300	300	—5
Sigma	200	325	320	325	—20
Sil Miller	1300	25	25	25	—1
Sil Stand	500	20	20	20	
Sicore	1400	191	190	190	—4
Starratt	43500	9½	8½	8½	—1
Steep R	3285	415	405	415	+5
Sturgeon	800	21	21	21	
Sullivan	400	150	150	150	—5
Sunburst	15000	12½	12	13	
Sylvanite	800	9½	9½	9½	
Teck-H	1210	160	160	160	
Temag	500	80	80	80	—5
Thom L	2100	53	52	52	—1
Tombill	6100	80	77	75	—5
Tormont	12213	34	30	32	—2
Trans Res	6500	11	10	11	+ ½
Tribag	12300	140	134	135	—3
Trin Chib	750	30	29	30	—1
U Mining	500	18½	18½	18½	
U Asbestos	375	415	410	415	—15
Un Buffad	10000	63	58	62	—2
Un Keno	3273	915	900	60	—10
U Fort	13000	15	13½	13½	— ½
Upp Can	8100	176	170	174	—2
Vandoo	1700	5	5	5	
Vanze	4366	71	65	70	—8
Violam	17400	139	120	131	—8
Weedon	5000	3½	3½	3½	
Werner	3000	9¼	9	9	
W Malar	15000	7½	6½	6½	—1
West mines	1300	230	225	225	—13
W Reay Lod	6000	19	19	19	—1
W Surf 1	5000	14	12½	12½	— ½
Willroy	5000	131	126	126	—5
Wilshire	300	230	30	230	—8
Wiltoy	36350	18	16½	17	
Wr Harg	2300	82	82	82	
Yale Lead	500	12	10½	10½	— 1½
Yk Bear	5825	110	107	108	—1
Young BG	6000	15	15	15	
Zenmac	47200	38	35	35½	— 2½
Bidcop	26100	12½	12	12	— ½
Joutel	1000	77	77	77	—1
Jowsey	9000	31	29	29	—2
Keeley Fr	50950	64	62	64	—1
		OILS			
Acme Gas	26500	18½	16½	16½	
Almines	1100	190	185	185	—13
Am Ledue	4468	3½	3½	3½	
Anz U Dev	18500	29	26	27	—4½
Asamera	3000	105	101	103	—2
Bailey S A	8440	825	770	775	—50
Bailey S pr	450	$20½	20½	20½	
Ball 5- pr	300	$24½	24½	24½	+ ½
Banff	4700	103	100	103	+1
Bata	1000	8	8	8	
Calalta	1500	14	14	14	—3
Calvert	3500	21	19	19	— 1½
Camerina	100	230	230	230	+5
C Oil Lds	3600	100	100	100	—3
CS Pete	11975	400	370	37	—3
C Chlefin	900	130	130	130	—3
C Delhi	4363	38	380	388	10
Cdn Dev	500	375	365	365	—20
C Ex Gas	26885	104	96	97	—11
C Ll Pete	2000	18½	18½	18½	— ½
Cent Del	39740	850	800	805	—45
Charter Oil	500	90	90	90	—3
C Mic Mac	1717	340	330	330	
Dev-Pal	69700	69	63	66	—6
Dome Pete	1800	$13	12¾	13	— ¼
Duvan	21500	11	9½	10	— 1½
Dynamic	4000	21	21	21	—1
Fargo	7350	284	278	275	—5
Glacier	10000	13	13½	13¾	— 1½
Gr Plains	1910	$12	12¾	12¾	— ½
Home A	1010	$11	10½	10	— ¼
Home B	2112	$10½	10¼	0c	— ¼
H B Oil fi	100	$15	15	15	
Landa	116	295	285	295	—30
Long Point	3300	18½	18½	18½	—1
Majtrans	18560	10	8½	9	— ½
Metal	17061	252	245	250	—5
Mill City	21200	26	25½	25½	— ½
Nat Pete	1043	210	201	201	—9
N Concord	1000	4	4	4	
N Cost	1700	23	23	23	— ½
N Davies	4000	11	10½	10½	— ½
Norcan	1100	250	245	245	—20
Northeal	14675	8½	8½	9	—1
NC Oils	1700	134	130	130	—3
Pac Pete w	20	630	63	636	—30
Palliser	2000	30	30	30	
Pamoil	13200	40	39	40	— ½
Permo	2500	23	24	24	— 1½
Perov Oils	4800	80	71	71	—8
Phillips	3400	24	23	24	+2
Place	7600	37	35	35	—2
Prajeris Oil	800	270	270	270	—6
Provo Gas	3500	150	135	139	—6
Quonto	3600	35½	25	25	—3
Ranger	100	100	100	100	
Sarcee	3000	95	95	95	—4
Secur Free	2965	660	635	640	—35
South U	6800	14	13½	13½	—1
Stanwell	300	30	30	30	
Tidal	2600	170	170	170	
Trans Can	4000	48	48	48	—3
Triad Oil	4282	140	132	132	—6
Unico Oil	3251	915	905	905	—35
Unisphere	6500	38	33	33	—5
U Canst vt	2200	133	122	133	—3
Un Oils	8251	132	126	128	—3
Un Reef P	17150	30	27	30	+2
Wespac	1000	11	11	11	
burne burne		7350	90	85	88
Watgles		850	640	640	40	—30
W Decalta		3633	100	100	100	—7
Windfall		2000	19	18½	18½	— ½
Yan Can		10100	8	7	8	
		BANKS				
Mont		1489	$56½	56¼	56½	— ½
NS		605	$66½	65½	65½	—
C Imp Bk		1122	$56¾	56½	56¼	
Royal		873	$69½	69¼	69½	— ¼
Tor Dom		179	$56½	56½	56¼	— ¾
		INDUSTRIALS				
Alumini		8845	$20	20	20¼	— ¼
C Brew		1895	$9¼	9¼	9¼	— ¼
D Magnes		300	$8	8	8	+ ¼
Gen Bake		300	$9½	9½	9½	— ¼
Inland		300	300	300	300	
Inv Sys		125	$53	53	53	— ¼
Inv Syn A		500	$44¼	44	44¼	— ¾
Pembina		300	$7¼	7¼	7¼	
Simpsons		300	$35½	35¾	35¾	
Stedman		200	$11¾	11	11	
Waiswr		800	110	105	110	+10
Walkers		1328	$40¾	40	40¼	—
Weston B		30	$17¼	17¼	17½	

Total Sales: 3,974,600.

MOST ACTIVE TORONTO STOCKS
By The Canadian Press

Stock	Sales	High	Low	Close	Chge
		INDUSTRIALS			Net
Rel. Phone	16001	44¾	43	43	— ¼
Cdn Oil	11138	$36¼	35¾	35	— ¾
Con Bldg	10191	9¾	4¼	4	— ¼
C Husky	8540	84¾	81¼	81¼	— ¾
Alumini	8445	$20	20	20¼	— ¼
		OILS			
Dev Pal	69700	69	63	66	—6
Cent Del	39740	850	800	805	—40
Mill City	31200	26	25½	25½	— ½
Acme Gas	26500	18½	16½	16½	+ ½
Majtrns	18560	10	8½	9	— ½
		MINES			
Nealon	131000	48	33	33½	—41½
Newnor	107700	30	25	26½	—2½
Paramq	81300	35½	30½	31½	—4
Pyncour	72700	19	17	18	+3
Cp Corp	58300	28	22	23½	— 1½
		MTUAL FUNDS			
		By The Canadian Press.			
				Bid	Ask
All Cdn Comp.				7.85	8.58
All Cdn Div.				5.36	6.00
American Growth				7.01	7.64
Beaubran				25.52	27.68
Canada Growth				4.42	4.83
Canadian Investment				9.58	10.16
Canafund				37.72	39.63
Champion Mutual				5.30	5.82
Commonwealth Inter.				7.96	8.72
Commonwealth Leverage				6.55	7.18
Corporate Investors				9.19	10.04
Dividend Shares				2.74	3.00
Dominion Equity				15.45	16.90
Dreyfus Inc.				13.51	14.68
European Growth				6.31	6.92
Federated Growth				4.35	4.83
First Oil and Gas				4.45	4.87

Pravda Publishes Summary Of 70-Hour Flight In Space

MOSCOW (AP) — Pravda, the Soviet Communist party newspaper, Monday published a lengthy and detailed summary of the results of the Nikolayev-Popovich space flight last August.

The summary took up more than two full pages of the four-page edition. It claimed that all the planned research tasks of the flight had been carried out successfully.

One of the main objects of the experiment was to determine the physical and psychological effects of prolonged space flight on humans.

Maj. Andrian Nikolayev, who started Aug. 11, spent almost four days in space. His "space twin," Lt.-Col. Pavel Popovich, joined him on the second day for a 70-hour sojourn in orbit.

The report said both men experienced no ill affects from the flight. They worked, ate, exercised and rested normally throughout it.

It said one of their tasks was to determine whether pain in the inner ear experienced by their predecessor Maj. Gherman Titov last year was a general phenomenon or one peculiar to Titov.

It said neither Nikolayev or Popovich reported any similar discomfort.

One of the major problems, the report said, was to maintain ground control over two space ships in orbit at the same time.

It said the two space ships maintained radio and television contact with the ground throughout the flight as well as between themselves.

It said the two cosmonauts spoke to one another every hour and reported good radio contact between the space ships, which flew from 3.9 to about 1.86 miles apart during the flight.

The report said the two Soviet cosmonauts had been subjected to insignificant dosages of radiation. Their space craft, however, contained a number of safeguards against lethal quantities of death-dealing rays.

It said the cabins "had necessary construction protection" against radiation. It did not give further details.

In addition, the cosmonauts were equipped with "special radio protective chemical preparations."

In event of extreme danger from radiation, it said the flight programs called for emergency descents to the earth.

NO ILL EFFECTS

OTTAWA (CP)—A pilot study by the federal health department shows that pelvic radiological and other radiological examinations of pregnant women have a "negligible" effect on the women and the children they bear.

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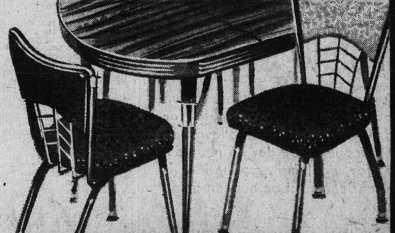

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