

# Stars Beget More Stars

By ALTON L. BLAKESLEE PASADENA, Calif. (AP)—Some stars apparently are steadily increasing the stardust necessary to beget new young daughter stars and planets like earth.

And some stars in the heavens may be second or third generation offspring of old or dead invisible stars.

The stars and universe perhaps began out of simple clouds of hydrogen, the simplest element of all. Then stars themselves created the rest of the kinds of atoms that make up the earth—and younger stars.

These are parts of a new theory of the origin and life of the universe. Evidence to support it is coming from new studies by astronomers and nuclear scientists. This theory challenges an older

theory that the universe began 4½ to five billion years ago with a big bang or explosion of one primeval central atom. That explosion supposedly instantly created all the chemical elements from which stars and planets came.

Some main evidence comes from brilliant analyses of the chemical elements existing in stars. These studies find stars do vary in their chemical makeup according to their age, masses and brightness.

Younger stars have more metals or heavy elements than old ones. And some giant red stars are manufacturing new elements, especially heavy ones up to the weight of lead, in abundance. And they apparently are spewing these new elements out into vast dust and gas clouds in space. This could be the stardust to make

new stars and planets.

Our earth could have been formed at least half a billion to a billion years after the universe itself began. Some of the earlier stars could have made the chemical elements found on earth.

The bits of evidence toward this theory come mainly from staff scientists and visiting scientists at the California Institute of Technology and the Mount Wilson and Palomar Observatories.

Dr. Jesse L. Greenstein, astrophysicist, finds the giant red stars are producing heavy elements, and that young stars often have more heavy elements than do old stars. Dr. Paul Merrill discovered the giant red stars are making technetium, a heavy, highly radioactive element not found on earth.

## NEWSY NOTES

By J. A. Clark, D.Sc.

**AMMONIA**

Ammonia or "Volatile Alkali" was one of the few chemical substances known to the ancients; Pliny referred to it under the name of "vehement odor" which he made by mixing lime with mistur (probably sal ammoniac). The name ammoniac was derived from its being obtained from sal ammoniac, which was first procured by heating the manure from camels in Libya, near the temple of Jupiter Ammon. It was also known as hartshorn and its pungent odor was once familiar in smearing salts, cleaning powders and in horse stables that were not maintained in a sanitary condition.

In 1910 the principal source of ammonia was the destructive distillation of coal in producing gas. It was also procured from blast-furnaces and paraffin works. The watery fluid obtained during the purification of this gas, contained ammonia, which was separated by adding hydrochloric acid, forming a compound called chloride of ammonia. This was dried by evaporation, and when mixed with its own weight of slaked lime in a retort, with gentle heat, the ammonia as a gas was given off and received in a vessel containing water. One volume of water at 3° deg. F. dissolved 1,050 volumes of ammoniacal gas. This hartshorn water, which is a colorless liquid, contains 32 per cent by weight of gas which has a density of .891 being lighter than water.

This solution of ammonia is transparent, colorless and is strongly alkaline. It has an acrid caustic taste and a very pungent odor. When exposed to air, the ammonia escapes and the solution becomes weaker. It freezes at -40 deg. F. Even in a gaseous condition it is generally combined with water, and has the following formula NH<sub>3</sub>·H<sub>2</sub>O. When freed from water the formula of ammonia is NH<sub>3</sub>. When this form is liquified under pressure and cold, it yields a clear, colorless, mobile liquid, with its pungent odor and other characteristic intensified.

**AMMONIA SALTS**

Ammonia combines with acids to form a number of salts, among others: ammonium sulphate, ammonium nitrate, ammonium phosphate and other ammonium salts and liquors which are used in the making of the so-called mixed fertilizers for farm use; their proportions of nitrogen, phosphoric acid and potassium being indicated in that order as "6-10-8" and so forth.

**INCREASED DEMAND**

In former times the actual amount of ammonia used was comparatively small. It was when the great demand for nitrogen arose for fertilizers to increase plant growth and for the manufacture of explosives before and during World War I, that the prime importance of ammonia was recognized in that it contained nitrogen, an inert gas, which became available for many useful purposes (when combined with hydrogen it forms ammonia.)

Four fifths of the air about us is nitrogen, and nitrogen is essential to plant growth, but in this state, only a few plants, mostly legumes, can secure any of this nitrogen, and they get only a small quantity through the action of bacterial root nodules which break down to produce ammonia. We speak of nitrogen being "fixed" to become readily assimilated by plants; this means that nitrogen must be joined by some other element. Lightning also causes fixation, but the amount supplied by these natural processes does not begin to supply modern agricultural needs or those of war of industry. Until early in the 20th century, the requirement of nitrogen for agriculture and in the making of explosives was almost entirely met by the importation of Chile Saltpeter (sodium nitrate), and there was little demand for ammonia the combination of nitrogen (NH<sub>3</sub>).

**RECORD HEIGHT**

Record altitude for a manned balloon is 72,395 feet by a helium-filled balloon in South Dakota in 1935.

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**SYNTHETIC AMMONIA**

It was in 1910 that Haber and LeRossignol developed catalytic processes for combining nitrogen and hydrogen, under high pressure, to form ammonia. The first commercial plant that used Haber's process started operation in Germany in 1913, and by 1918 Germany had a well-developed synthetic ammonia industry. England also had built a large synthetic plant at Billingham, during the war. The first synthetic ammonia plant in North America was built at Syracuse, New York, in 1921; and Canada's first plant was built at Windsor, Ontario, in 1930. The output from these North American plants was used mainly for commercial explosives and for refrigeration. The ammonia for the fertilizer industry was mostly imported at that time.

**CANADIAN PRODUCTION**

Before World War II, there were only three ammonia plants in operation in Canada; a plant at Toronto using ammonia liquor from the gas works; the pioneer synthetic plant at Windsor and the Consolidated Mining and Smelting Corporation Plant at Trail, B.C. Some other steel plants had reacted ammonia liquor, from coke oven operations that by adding sulphuric acid made ammonium sulphate.

During the war, three new plants to manufacture ammonia were built in Canada: at Welland, Ontario, and since that time a plant has been built at Sarnia. A new plant is now being erected at Millhaven, Ontario, by Can Industries Ltd. (C-I-L), which will have a capacity production of 200 tons of ammonia per day. The demand is such that other plants are likely to be constructed in the near future. Ammonia has been joined the great chemical "work horses" of industry (caustic soda, sulphuric acid, chlorine and a few others).

**NEW USES**

Ammonia is now used in important developments in the petroleum industry. Organic compounds of ammonia are used to help take sulphur out of Alberta gas. It is used to improve synthetic detergents. Dry batteries require ammonium chloride. In galvanizing metals, ammonia products are used as fluxes. The bakeries are using ammonium carbonates to make soda biscuits, in the making of nylon stockings, ammonia is used. Many other uses could be mentioned, but the two comparatively new methods that have been largely responsible for the building of the latest ammonia plant.

The first is in connection with a method of leaching or dissolving metals from their ores, such as copper and nickel. This process is used by the Sherriett Gordon Mines at Port Saskatchewan, Alberta, in their nickel refinery. The ammonia used for this purpose is eventually used to produce a by-product, ammonium sulphate an agricultural fertilizer. Natural gas is used to supply the hydrogen. The nitrogen is taken from the air and the ammonia required by the Sherriett Gordon plant is so great that they have built a 75-ton-a-day plant right by their refinery. This work is based on a discovery made by Prof. Forward of the University of British Columbia.

The second reason is connected with the expected use of ammonia in the Canadian sulphide pulp industry. It has been found that Jack pines can be more easily handled with less waste and at a lower cost than with former methods. Ammonia was first used for this purpose in 1902. There has been a limited amount of ammonium sulphide pulp made commercially since 1936. Rising costs have led the industry to seek new means of economy by lowering cooking temperatures and shortening cooking cycles; ammonia forms a very promising means of doing this. All these outlets have given ammonia production a dramatic and unprecedented development.

**KENSINGTON UNITED**

The Kensington United Church C. G. I. T. groups re-organized recently with Mrs. Bruce Roberts and Mrs. Robert Carruthers as leaders of the Senior Group and Miss Dorothy MacKenzie and Mrs. Leslie Clark as Intermediate Group Leaders. The officers elected were:

Senior Group president, Mona Mayhew; vice president, Jean Murray; treasurer, Margaret Walker; convener of membership, Connie Brown.

The Intermediate Group president, Evelyn Moase; vice president, Donna Jean Baker; secretary, Marilyn Bryant; treasurer, Judith Cousins.

These groups are almost completing their Mission Study and are collecting woolsens to trade for a blanket which they plan to send to Hong Kong. A Halloween Masquerade Party is planned for November 2.

**NEW GROUPS**

The sponsors of this column welcome news of new groups, please send your news to Mrs. Robert Carruthers, Kensington.

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## C.G.I.T. COLUMN

**ON EUROPEAN TRAINING CRUISE**

AB Leroy Vessey, of Dunstaffnage, P. E. I., is seen placing a decorative cover over the barrel of a squid mounting in HMCS Algonquin. The destroyer escort is senior ship of the Canadian First Escort Squadron, currently on a training cruise to England, Ireland, France, Portugal and the Azores. The squadron will return to Halifax late in November. (National Defence Photo.)

**Cherish Health — Seek Truth — Know God — Serve Others.**

These are the four parts to the Canadian Girls in Training Purpose and these topics will be subjects for discussion at Fall Rallies held in November. On Saturday November 10 from 9.15-6.30 p.m. a C. G. I. T. Rally will be held at Bedeque United Church for leaders and girls in Western Queens and Prince Counties. Worship, games, singing, crafts and discussions will form the program, which ends with a box-lunch supper.

**LEADERS**

A leaders get-together is planned for 2.30 p.m. at the Bedeque Rally. See you there! Mrs. Lloyd Archer is directing the Bedeque Rally and Mrs. Robert Acorn the Eastern one. Mona Mayhew, National Camper and Jean Murray or Dianne Jenkins, Camp Councilors will report at the Rallies.

**UNITED CHARLOTTETOWN**

Mrs. Robert S. Acorn is the leader of the Intermediate Group and the officers are: president, Joan Cudmore; vice president, Myra Caswell; secretary - treasurer Sandra Ash.

Miss Hazel Hunter is the leader of the Senior Group the officers of which are: president Carol Thompson; vice president Margaret Parker; secretary - treasurer, Carol Chandler.

**EDINBURGH (Reuters)—**About 1,000 Scottish students fought a furious battle Friday as rival Suez demonstrators clashed in the quadrangle of Edinburgh University.

Students backing Britain's attack on Egypt and anti-government factions from the university brawled among exploding fireworks, bursting flour bags and toppling banners.

**Scottish Students In Demonstration**

Some demonstrators who tried to set fire to a tattered Union Jack were pounced on by a crowd of yelling youths and beaten up.

A number of students were reported to have been injured in the fighting.

Demonstrations were staged by students at five other English universities.

At Leeds, one party including students from Egypt and India, marched in procession to the city centre bearing banners denouncing British policy.

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**How Money was made in Olden Days**

The earliest coins were hand-struck and fashioned by dropping a lump of heated metal on a flat anvil. The metal then received a "cut" impression from the punch. The outlines were quite irregular and the "pattern" badly centred.

Courtesy The Royal Ontario Museum.

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## Canadian Remanded On Murder Charge In London

LONDON (CP)—A Canadian sailor, said to have told police he had a weakness for pornographic literature, today was remanded until Nov. 5 on a charge of murdering a Soho shop assistant.

Richard Rhodes Henley, 26, of Creston B.C. and Dartmouth, N.S., was arrested Saturday night shortly after Alan John Robinson was shot and killed in a bookshop in London's cosmopolitan Soho district.

Dressed in the uniform of a leading seaman in the Royal Canadian Navy, Henley stood in the dock at Marlborough Street police station today as a police officer read a statement he was alleged to have made a few hours after the shooting.

The statement quoted Henley, a member of the crew of the Canadian destroyer Iroquois now docked at Southampton, as saying:

**WEAKNESS CAUSED IT**

"I want to tell you the real reason for this. I have a weakness and that is the cause of it all.

"I decided that when I came up to London I would get some pornographic films and photos by robbery. I brought the gun with me as I thought there might be an opportunity of taking them away from the owner at gunpoint.

"I requested the man to come into the back room (of the bookshop), giving him to believe that my money was concealed on my person. When he opened the door I pulled my gun and pointed it at him and told him I was leaving.

"After I turned he rushed after me. I was violently frightened and pulled the trigger."

**Scottish Students In Demonstration**

EDINBURGH (Reuters)—About 1,000 Scottish students fought a furious battle Friday as rival Suez demonstrators clashed in the quadrangle of Edinburgh University.

Students backing Britain's attack on Egypt and anti-government factions from the university brawled among exploding fireworks, bursting flour bags and toppling banners.

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A number of students were reported to have been injured in the fighting.

Demonstrations were staged by students at five other English universities.

At Leeds, one party including students from Egypt and India, marched in procession to the city centre bearing banners denouncing British policy.

**WAS FRIGHTENED**

Chief Inspector Victor Massey, who read the statement to the court, said that after Henley had been formally charged and cautioned, the sailor said:

"I want to say that I had absolutely no intention of shooting the man. I shot him because I was frightened. It was an automatic thing."

Cmdr. D. L. Hanington, captain of the Iroquois, was present at today's hearing.

The Iroquois, one of four Canadian destroyers now in British waters on a training cruise, docked at Southampton last Wednesday. She is scheduled to leave Southampton for Lorient and St. Jean de Luz in France Oct. 24.

**HAD EXPENSIVE TASTES**

Robinson, who lived in an expensive flat on Dorset Street in London's Marylebone district and was married to a beautiful fashion model, died from a .32-calibre bullet wound in the chest.

A Canadian Navy spokesman said Henley was married and that his wife lived at Dartmouth, N.S. Naval records list his home town as Creston, B.C.

## Other Canadian Mine Disasters

By THE CANADIAN PRESS

Springhill, N.S., where 108 men were reported trapped in a mine Thursday night following an explosion, was the scene of one of the worst mining disasters in Canadian history when 125 men were killed in 1891.

Canada has been free from major mining accidents since Jan. 14, 1952, when 19 men died in an explosion in the Mcgregor mine at Stellarton, S.

Other major mine disasters in Canada:

1873-60 killed at Drummond colliery in Nova Scotia.

1890-44 killed in Albion Mine, Stellarton.

1897-147 dead in No. 1 mine, Nanaimo, B.C.

1899-60 killed by gas explosion at Wellington, B.C.

1903-125 killed by gas explosion at Coal Creek, B.C.

1914-193 killed in mine explosion at Hillcrest, Alta.

1917-65 killed at New Waterford, N.S.

1918-88 killed at Stellarton, B.C.

1930-45 killed at Bake Burn, B.C.

## GREAT BRIDGE

The suspension bridge over the Straits of Mackinac in Michigan, to be completed in 1957, is a stone and steel link stretching 26,444 feet.

## Do You Know Your Child?

Is your child normal, subnormal or supernormal? With the simple chart you'll find in The Standard this week you can make your own analysis. Check up and know his rating. Get The Standard—on sale now, complete with magazine, 12-page novel and 20 pages of comics. Only ten cents.

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WONG SIGN  
NEWCASTLE, N. B. (CP)—  
Danny Wong, 21-year-old defence-meat who played last year with Three Rivers in the Quebec Hockey League and Saskatoon Quakers of the western loop, has signed with the Miramichi Beavers of the North Shore Hockey League. The 180-pound rearguard is a native of Howard, Sask.

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BALANCE SHEET AS AT 31st AUGUST 1956

(Including Details of the Earned Surplus Account for the fiscal period of 8 months ended 31st August 1956)

ASSETS		LIABILITIES	
<b>CURRENT:</b>		<b>CURRENT:</b>	
Cash on hand and in banks	\$ 72,577.22	Bank loans	\$ 500,000.00
Accounts receivable	\$ 395,993.86	Accounts payable and accrued liabilities	231,741.52
Loans: Provision for doubtful accounts	2,000.00	Dividends payable	37,500.00
	393,993.86	Deposits re production contracts	8,984.24
Inventories of matured and un-matured spirits, raw materials, manufacturing and other supplies, valued at the lower of cost or market	2,071,225.20	Taxes payable	186,270.12
	\$2,537,795.57		\$ 844,495.88
CASH SURRENDER VALUE OF LIFE INSURANCE POLICIES	7,708.91	<b>RESERVE FOR CONTINGENCIES</b>	40,000.00
PREPAID AND DEFERRED CHARGES:		<b>CAPITAL STOCK:</b>	
Unexpired insurance, taxes and other prepaid items	41,828.72	Authorized and issued	
Leasehold improvements, less amount amortized	15,655.66	125,000 shares 4% cumulative participating preferred, par value \$10.00 each	1,250,000.00
	57,484.38	62,500 shares common, no par value	250,000.00
			1,500,000.00
		<b>EARNED SURPLUS ACCOUNT:</b>	
		Balance at credit, 1st January 1956	1,095,863.37
		Add:	
		Net operating profit for the fiscal period ending 31st August 1956 before taking up the items below	\$ 209,046.48
		Deduct:	
		Provision for depreciation	\$ 44,828.97
		Provision for income taxes	125,000.00
			169,828.97
		Net profit for the fiscal period of eight months ended 31st August 1956	171,222.49
		Deduct:	
		Dividends declared on the preferred shares—Cumulative dividend of 40 cents per share in respect of the year ending 31st December 1955	75,000.00
		Non-Cumulative dividend of 10 cents per share in respect of 1955	12,500.00
			87,500.00
		Balance at credit, 31st August, 1956	1,329,566.96
			\$3,514,082.16

Approved on behalf of the Board:  
F. W. ROYER  
S. MARSHALL