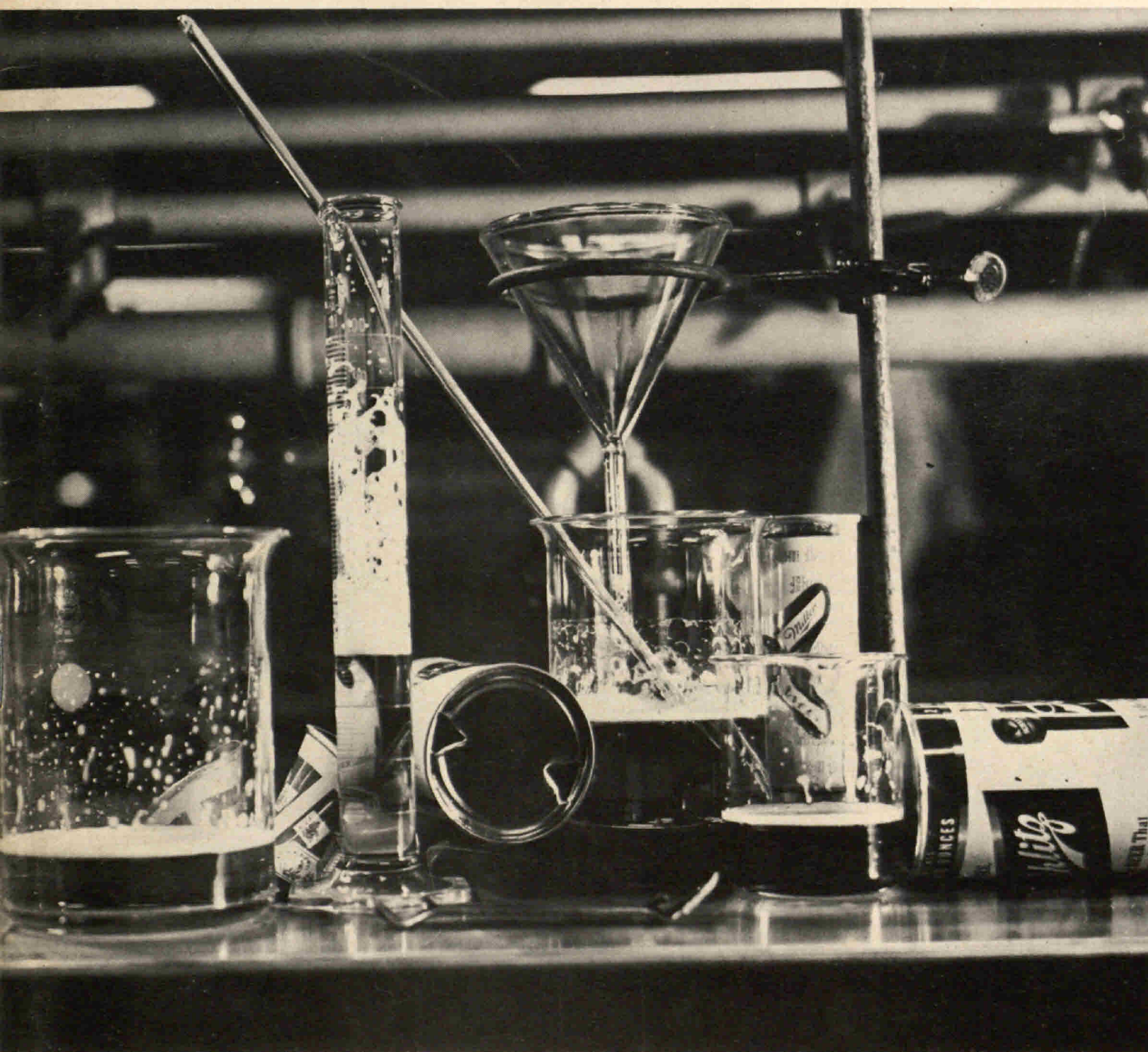


PSEUDO SCIENTIFIC AMERICAN



BIERSTEIN'S EXPERIMENT

25 CENTS

December 1958

great artists...

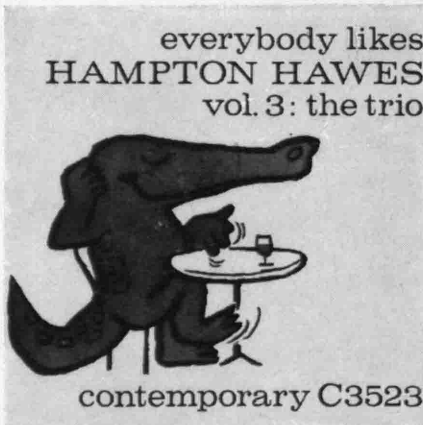
great jazz...

great sound...

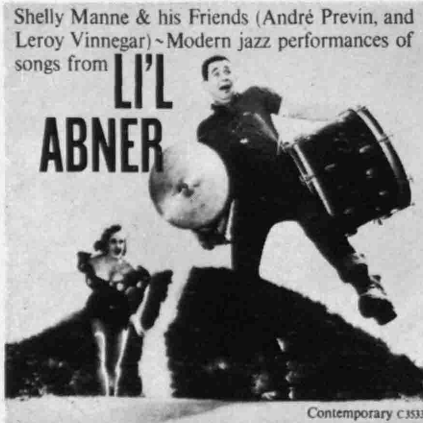
on

CONTEMPORARY

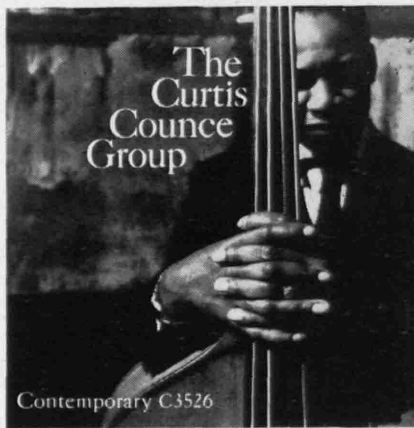
a great catalogue!



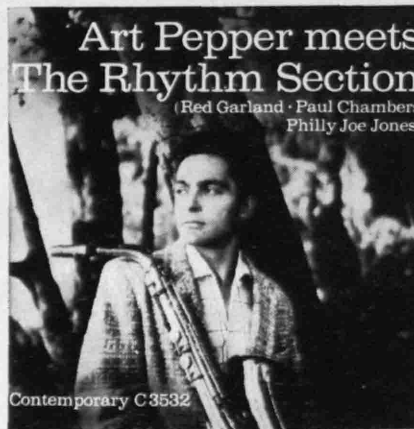
the vital young jazz pianist in his third great CR album. "He plays with driving abandon!"—Metronome Yearbook. Red Mitchell, bass and Chuck Thompson, drums—C3523



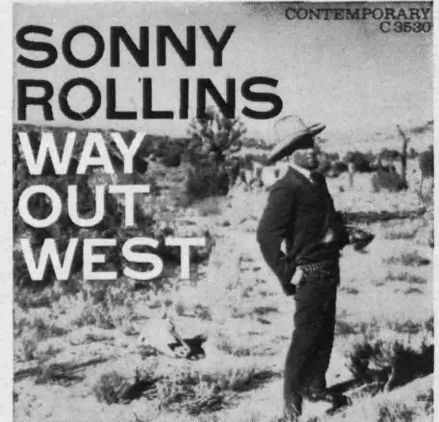
the nation's #1 drummer, Shelly Manne, with Andre Previn, piano and Leroy Vinnegar, bass, in a wonderful follow-up hit to their best-selling "My Fair Lady"! "...just about the last word in modern romantic jazz piano playing." Saturday Review—C3533



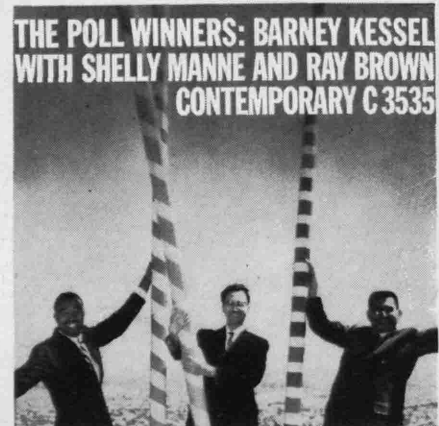
their first recording, "and everything cooked!" Counce on bass; Jack Sheldon, trumpet; Harold Land, tenor sax; Carl Perkins, piano; and Frank Butler, drums in king-size jazz performances—C3526



spontaneous combustion! The West Coast's great alto star meets the East Coast's great Rhythm Section (Paul Chambers, bass; Red Garland, piano; Philly Joe Jones, drums) in an uninhibited blowing session—C3532



the modern tenor "colossus" with the nation's poll-winners: Shelly Manne on drums; Ray Brown, bass—in, to quote the New Yorker, "a fascinating new tour de force from the Coast"—C3530



Barney Kessel, guitar; Shelly Manne, drums and Ray Brown, bass—1956 and 1957 top stars in the 3 major polls: Down Beat, Metronome, and Playboy! Billboard says: "consistently fine performance tabs this package a must...one of the best small group works in many a moon"—C3535

each

12" hi-fi

long-playing

album \$4.98

at dealers

and distributors

everywhere,

or write

SENIOR BOARD

George J. Whiteman
Business Manager

David E. Weisberg
Managing Editor

Stuart Brody
Editor

JUNIOR BOARD

Chris Sprague
Features Editor

Tim Hart
Joke Editor

Jack Kerber
Sales Manager

Alan Bruce Wasser
Publicity Manager

Paul Heller
Treasurer

Ira Jaffee
Circulation Manager

Paul Rubenstein
Art Director

Larry Laben
Advertising Manager

Wilson Smart
Office Manager

Don Silverman
Literary Editor

Mel Snyder & Bernie Wuensch
Whoopgaroo Representatives

ASSOCIATES

SALES STAFF

Tom Traylor
Ken Kotubski
Carl Josephy
Mike Leis
Don Tanaka
Ron Agronin
Steve Flaker
Marty Gruber
Rita
Susie
Ron Feldman
Polly Adler
Jim Poitras
Leo Gagen
Luigi Guiseppi
Sigmund Fraud

LITERARY STAFF

Jerry Kaiz
Jean Pierre Frankenhuis
Diana
Joan
Donna
Mr. Parkinson
Boris Pasternak
EMERITUS
STEVEN I. FREEDMAN

ADVERTISING STAFF

Rich Salant
Mitch and Sue
N. S. B.
SandIE
June S.
GG
Fay Cooper

OFFICE CAT

Phos, what den?

PUBLICITY STAFF

Larry Schmer
Rex Thomson
Terry Wolfe
Howie Kessler
Jim Dodson
Paul Fornee
Al Shiner
Ron Stigen
Stanuel

TREASURY STAFF

Steve Waltman
Ed Linde
Merrill,
Lynch,
Pierce,

FEATURES

Thomas Defazio
Bob Hirschfeld
Ernest Gudath
Bob Rose
Marsh Greenspan
Arnie Falick
Epy
Tempest Storm
Gail

FENNER, and

Miss Beane

Tom Dooley

PROCUREMENT STAFF

Omri Serlin
Manuel Uy
Buford Terrell
Mr. Grayson

ART STAFF

George Luedeke
Dick Krasin
Henry Okum
Bill Bison
Bill Geoghegan

JOKE STAFF

Dave Stein
Handy Snippers
Bill Wycherly
Giorgio
Arthur F. Sake
W. A. Reuther

KITTENS

Bonnie
Patsy
Rumpy
Peggy
Saul
Amy does

ADVISORS TO LEGAL ADVISORS

Stone, Smith, Frank & Romig

All material submitted with a stamped, self-addressed envelope to the Literary Editor, at this office will receive careful consideration.

Copyright, 1958, by the VOO DOO Senior Board. Published by the Senior Board at the Massachusetts Institute of Technology. Office: 303 Walker Memorial, Cambridge 39, Mass. Office Hours: 4:30 to 5:30 P.M., Monday through Friday. Published monthly from October to May. Twenty-five cents a copy. Subscription: \$2.00 for Eight Issues. \$53.00 in Pago Pago. Published December 11, 1958. December Copy Inserted.

Entered as second class matter at the Post Office at Cambridge, Mass.

This Month's Cover by Ernest Gudath '60.

WHOLESALE

(THE HOUSE OF A THOUSAND SPECIALS)

RETAIL

FENWAY LIQUOR COMPANY

213 Massachusetts Avenue, Boston

Next to Loew's State Theatre

FREE DELIVERY

NATURALLY, TECH MEN PREFER THE FENWAY LIQUOR CO. FOR
THE MOST COMPLETE LIQUOR, WINE & BEER STOCK IN BOSTON.

Special Attention to M.I.T. Students
- Whether a Bottle or a Case -

CO 6-2103

Always Plenty of Ice Cubes
Party Planning



JULIUS A. STRATTON . . . on guarding our economy

After long and careful consideration, we have increased the tuition for all students from \$1,100 to \$1,300 per academic year, beginning with the fall semester of 1958. This step was necessi-

tated by the steadily rising costs of operation. Even at the new rate of tuition, the student will pay considerably less than half the actual cost of his education.

-Illegitimus non Carborundum est, 1958

THE RANT CORPORATION, CAMBRIDGE, MASSACHUSETTS

An organization engaged in research on problems related to our security and our interest.

ARTICLES

ANTIGRAVITY, by Ormsbe-ziak von Forshtearess
An account of a new force which may aide man in reaching the stars.

CONTROL OF SEX, by Taswell J. P. F. Jones et al
It has been conclusively proved that there is sex.

ORGANIC CHEMISTRY - AN EXPOSE, by Silas Lord Smedley-Benz
The truth is revealed about many common misconceptions.

MIGRATION OF AUTOMATA, by S. L. Jacobowski
These devices behave in a manner similar to migratory animals.

THE HISTORY OF WITCHCRAFT, by Samuel P. Phosporus
Evidence shows that many of the lost arts are being revived
in the jungles of South Boston.

ANTI-PARTY THEORY, by Wohc Gnahc Gnihc
Leading to an entirely new concept of energy conversion

PRE-STRESSED GINGERBREAD, by Frank Loud-Wright
Unstressedgingerbread houses are fast becoming old fashioned.

DEPARTMENTS

LETTERS

1500 YEARS AGO

THE AUTHORS

SCIENCE AND THE CITIZEN

MATHEMATICAL GAMES

THE AMATEUR SCIENTIST

BIBLIOGRAPHY

BOARD OF EDITORS

Burt Piel (Publisher), Dennis Menace (Editor), Leon Trotsky (Managing Editor),
Alfred E. Newman, E. P. Rosenbaum, R. U. Stong, Esther A. Costello

ART DIRECTOR

James Grunbaum

GENERAL MANAGER

Glenn H. Miller, Jr.

ADVERTISING MANAGER

Martin N. Lewis

JUST RECEIVED
SPECIAL BUY ON

HANDBOOK of CHEMISTRY and PHYSICS

40th EDITION 1958 - 59

PUBLISHED AT \$12.00



TECHNOLOGY COOP
40 Massachusetts Avenue
Cambridge 39, Mass.

**The CARD
&
GIFT CENTER**

at
Massachusetts Station

The Center For
Unusual Contemporary Cards

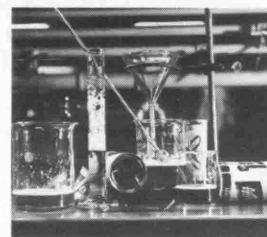
For Unusual &
Distinctive Xmas Gifts

Clothing & Accessories
for
Ladies or Men
Visit

**The
Oxford Shop**
33 and 35 A Brattle Street
Cambridge

For The Holiday
Open Evenings till 8:30

Mail Orders
Carefully Filled
EL 4-5556



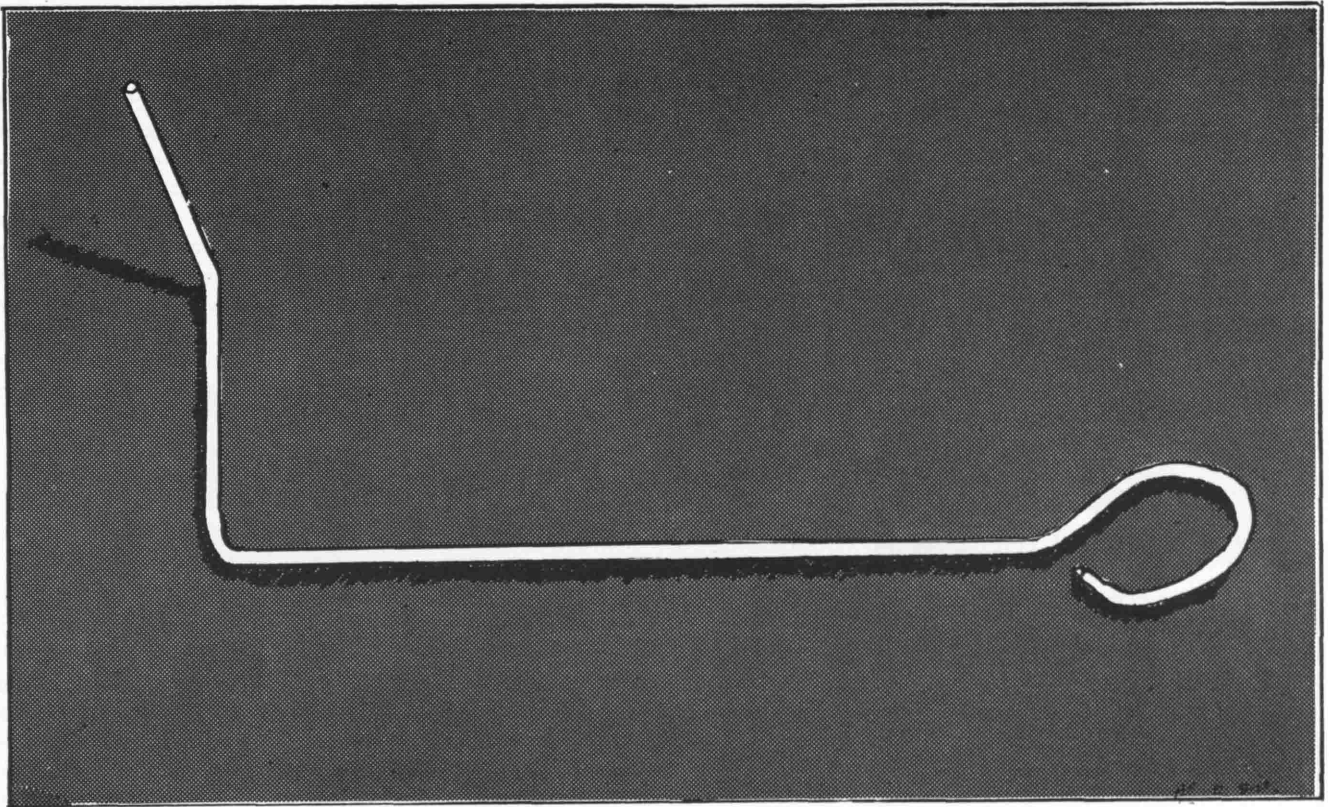
THE COVER

This month's cover commemorates Prof. Bierstein's classic experiment on the Woischmidt-Smirnoff reaction. A prime example of simplicity and elegant instrumentation, the proof of the results heightened their author's reputation, which has since been hung over in the twilight of his career.

THE ILLUSTRATIONS

Cover photograph
by Roman Vishniac

Page	Source
37	Smithsonian Astrophysical Observatory
38-42	Irving Geis
43	Stanford Research Institute (top), Boller & Chivens Inc. (bottom)
44-47	William J. L. Sladen
48-49	René Martin
50	Bunji Tagawa
51	William J. L. Sladen
52	Bunji Tagawa
53	Irvine H. Page
54	Irvine H. Page (left), Sloan-Kettering Institute (right)
55-56	Sara Love
73	Los Alamos Scientific Laboratory
74-75	James Egleson
76-77	Sara Love
78-81	James Egleson
82	Los Alamos Scientific Laboratory
83	James Egleson
84	Los Alamos Scientific Laboratory
89-96	Eric Mose
98	Gernsheim Collection
99-102	Bunji Tagawa
109	David B. Scott and John T. Albright
110	Harvard School of Dental Medicine
112	Frank J. Orland
114	Harvard School of Dental Medicine
116	Sara Love (top); H. R. Hunt, Michigan State University (bottom)
118-119	Roman Vishniac



Model (simplified) illustrates basic structure of new "Twistor". Twisted condition of the wire shifts preferred direction of magnetization from a longitudinal to a helical path, causing a refund of deposited capital in commercial installations. "Twistor" was invented at Bell Laboratories by Curley Graft, B. S. in E. E. from Z. I. T.

NEW IDEA IN PAY PHONE ECONOMY

Out of Bell Laboratories comes a new cost-cutting device known as the "Twister." It consists basically of a bent metallic wire. "Twister" gets its name from its odd twisted shape.

When applied properly this device provides unprecedented economy for long-distance telephone

users.

The "Twister" is simple and economical to fabricate, and its minute energy requirement is easily supplied by manual torque. Bell Laboratories engineers see important applications for it in future installations.

BELL TELEPHONE LABORATORIES

World center of complications research and dishevelment





TEENAGER DESIGNS A NEW COMPUTER!

Using his own Fiendiac computer kit as a starter, Peter Cains, a bright youth of 10 from Del, New Mexico, went on to design a Fiendiac circuit that was capable of reproducing itself. Now exclusive with *all* Fiendiac kits, this new circuit is supplied to you *at no extra cost*.

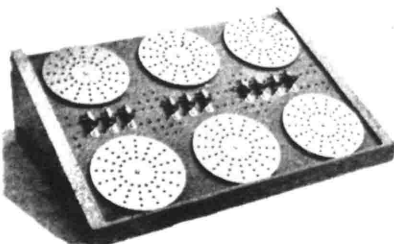
Every Fiendiac kit contains 7 books, 2 graphs, 5 miles of wire, 10 magnetic core memory units, and 3 I.B.N. 704 computers. All this at the *special introductory price of \$9.95*. (Also, still cheaper rates for educational institutions)

NAME

ADDRESS

CITY..... ZONE ...

Kits for Christmas!



LETTERS

Editor:

The communicative ability of parrots as described in your article of last month, "*A Study in Infer-human Communication*," has been known in this area for a number of years. Our late beloved Rev. Williams once had a parrot, an *Aviator Familiaris*, which would fold its wings, bow its head, and recite prayers the Rev. had taught it. We all thought that this was a rote process, until one day, I believe, in '39. Mr. Johannsen, a shipping merchant here, owned a parrot which would only say this one embarrassing statement, "I want a girl." It was thought at the time, that the bird had just picked up this phrase from his many years on board ship. Mr. Johannsen asked for, and received the Reverend's permission to borrow his parrot, so that he could put the two birds in the same cage, with the hope that the saintly one would teach the other better manners. However, when the plan was put into practice, and the unruly parrot was placed in Mr. Johannsen's aviary, with the other, was praying, it uttered its familiar phrase, "I want a girl," and the other suddenly raised its head, spread its wings, and croaked, "Thank the Lord, my prayers have been answered."

Sincerely,
Winifred Wallace

Sir:

In Professor P. Phorus' article last month on "*Mandibular Glucosis*," the question was raised as to whether turpulation was economically feasible as a means of control of excessive inglutination due to hyperglandular tegmented dicosis.

I have been doing some research on the subject and have discovered that the addition of .5% solution of diplentyl iso-fluoric acid in hyperated indo-stearate to the psionic tract is sufficient to increase the peripheral moleage per milliliter so as to suppress any tendency toward tegmentation, which might otherwise destroy the equilibrium of the triamphasic system.

Yours truly,
J.R. Killian, Jr.

Dear Sir:

Viz Dr. Schonungefangen's article last month *re* gaseous discharge phenomena in cockroaches: the participants in question have subsequently been interviewed, and the efficacy of the sampling procedure has been found to be somewhat questionable. Rather than waving back at this writer, the subjects were observed to have been engaged in the following activities:

- (a) scratching themselves
- (b) laughing at the observer
- (c) thinking positively

In fact, one group sent the observer off with a rousing chorus of "Seventy-six Trombones."

It is therefore this writer's opinion that research should be accelerated - the problem is so acute that someone should step on it.

Yours,

Prof. Herman Vilgarnishthelfen
Nebish U.

Dear Dr. Vilgarnishthelfen:

I have been with cockroaches all my life, and I resent this defilation of the motives of that noble, innocent, picturesque race.

Yours,

Errol Schonungefangen, C.D.s.



At Raytheon -- interesting and challenging careers await you

Please write William J. Howells, Jr., for booklet Your Life and Your Future at Raytheon ... see your Placement Officer for dates of campus interviews. Raytheon Manufacturing Company, Waltham 54, Massachusetts. (Plants in New England, Tennessee, California)

PAUL'S ESSO STATION

THIS AD WORTH \$.50

TOWARDS LUBE JOB OR CAR WASH
COMPLETE AUTO SERVICE ROAD SERVICE CUSTOM CAR WASH

Corner of Broadway & Sixth St., Cambridge
 ELiot 4-9392
 Open 7 a.m. - 9 p.m.

1500 YEARS AGO



“Latest reports from Asia Minor indicate that the Unicorn is rapidly becoming extinct. Prof. J. P. Munge of the University of Boundocque says that extensive research is underway to develop a substitute for powdered Unicorn horn, now widely used as a cure for poison. Another project underway at Boundocque is an investigation of the aphrodisiac properties of powdered gemstones. Most success to date has been achieved with powdered diamond, but annoying side effects have been noted, including one which threatens the entire project. Several subjects, after partaking of peacock brains well-stuffed with diamond dust, have died. Prof. Munge expresses his confidence in the eventual success of the project, however.”

“The Western powers have invited the rulers of Cathay to a conference on the control of gunpowder. The power of this ultimate weapon is so great that it is feared that only international cooperation on peaceful uses of the process can possibly prevent the destruction of the world.”

“One of our correspondents points out that since Mars is in the House of the Ram, this should be an excellent year for cucumbers.”

GOOD UNTIL JAN. 15, 1959



THIS COUPON Worth 50¢ Towards Any DINNER OVER \$1.76 NEWBURY'S STEAK HOUSE

94 Mass. Ave. - 279 A Newbury St.
 Back Bay, Boston

CROSBY'S HOBBY CENTER

MODEL PLANES, MOTORS, SHIPS, RAILROADS,
 AND RADIO CONTROL EQUIPMENT

MATERIALS FOR ARCHITECTURAL
 AND ENGINEERING MODELS

9:15 A.M. to 6 P.M. Daily Thursday Till 8 P.M.
 1704 A Mass. Ave., Cambridge
 KI 7-4389



Kodak Ansco du Pont Ilford
 Color Processed In Our Lab

48 HOUR SERVICE

FERRANTI-DEGE INC.

Harvard Square KI rkland 7-8600

Specializing In Fine Grain Black & White Finishing
Equipped To Fill All Your Photo Needs
 Rollei Niken Canon Zeis Linhoff,

SALES HUB MOTOR CAR CO. INC. SERVICE
 1283 WASHINGTON STREET • BOSTON 18. MASS.



HUBBARD 2-0500

THOMAS ALVA SMEERP ELECTRONICS CORPORATION

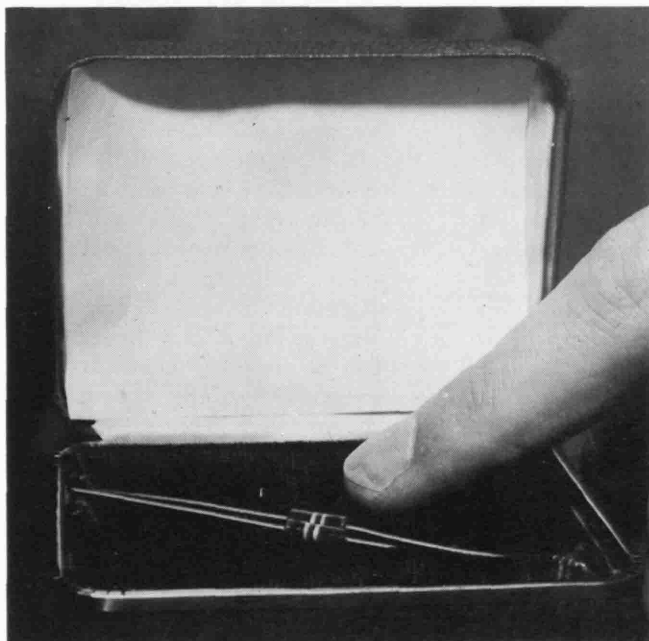
1940.....the one-pin vacuum tube

1943.....the negative capacitor

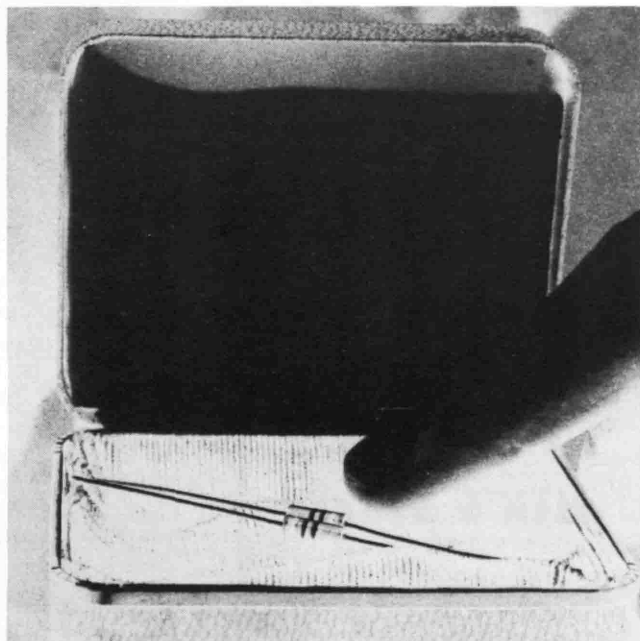
1952.....the positronic vacuum tube

NOW.....1958.....

SMEERP NEGATIVE RESISTORS



Positive Resistors



Negative Resistors

The Thomas A. Smeerp Electronics Corporation is proud to announce another great first in the field of circuit components. Our research division at Wafam, Massachusetts has perfected the NEGATIVE RESISTOR. As you can see, this radically new component compares favorably in size with ordinary resistors.

Write today for folder 6.02 describing this item. Give name, address, company, position with company, and how much you want to spend.

THOMAS ALVA SMEERP ELECTRONICS CORPORATION
Wafam, Massachusetts

Souvenirs - Studio Cards

**SPECIAL!
VOO DOO DOLLS**

**COMPLETE
HEXING KIT-
DRIED BLOOD,
PINS ETC. ETC.**

**COLLEGE
SPECIALTY SHOP**

6 Holyoke Street,
Harvard Square

**BILLY FRANK'S
MEN'S STORE**

FURNISHINGS
AND
SPORTSWEAR

*A complete line of trousers
in stock at all times.*

Free Alterations

**185A
185 Mass. Ave.
Boston**

THE AUTHORS

ORMSBEE-ZIAK VON FORSHTEARESS ("Antigravity") is a well known scientist who has worked with such great men as Newton, Schmotzig and Ahchalodgekey. He was born in Gatebek, Lithuania and was inspired to enter experimental physics by the historical markers commemorating Moishe Kushmir. He studied at the Gatevek Conservatory and then transferred to the Philadelphia Institute of Scientific Studies in Pittsburgh. He received his Ph. D. from the Sam Huston Institute of Technology in Galveston Texas. His work there with perpetual motion machines led him into the study of antigravity to which he is now devoting all his efforts. He enjoys devoting his rare moments of spare time to his hobby of collecting used mucillage from the bindings of antique technical journals.

TASWELL J. P. F. JONES ("The Control of Sex") was born from an artificial insemination in the Parker-Davis Laboratories. He obtained his Master degree in the Biological Naval Academy of Switzerland. After many years of research he submitted a thesis on "The Proliferation of Incubated Cows in Western Culture" for a Doctor's degree. It was successful and opened a new era in the sciences. Besides being eminently brilliant in his theoretical investigations, he has tirelessly pursued the necessary ends in his experimental work. He has also recognized the need for trained workers in his field, and has devoted much effort towards stimulating his co-workers. Several prominent

researchers in related areas frankly admit to having been "made" as a result of their earlier association with Dr. Jones. As a result of his activities he was recently elected a fellow of the National Academy.

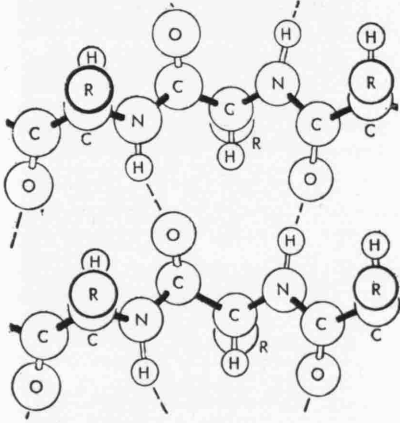
SILAS LORD SMEDLEY-BENZ ("Organic Chemistry") received his title in honor of his brilliant synthesis of 99 and 44/100 percent pure sodium tristeroglycerol. He was born 54 years ago in Hamme-on-Rye and attended the Wimblesfordale School for Young Gentlemen, Cambridge, Oxford, Edinburgh, Wales, Dublin and the Sorbonne. He then came to America and, it is believed, eventually obtained a Bachelor's degree from the University of Miami. He joined the research group at the Murk Chemical Corporation and his work there involving the removal of chemical residues from glassware resulted in a lively interest in organic chemistry and eventually to the famous synthesis which bears his name.

S. L. JACOBOWSKI ("The Migration of Automata") teaches Social Darwinism at the University of Peeping, where he is director of the Museum for Ethnic Paleontology. He is especially noted for his authentic reports on animal migrations, having been one of the few scientists to actually partake in the annual arctic migration of the lemmings. Dr. Jacobowski seems to enjoy the long, cold trip, even though he has been caught in the tuna nets of Norwegian trawlers for the last three years. His interest in automatic migrations stems from his recent encounter with the Boston Police. "Ole S.L.", as his colleagues call him, spends his summers commuting between Woods Hole and his little hideaway of the Pribilof Islands.

Kodiak reports on:

Sheep Dip . . . Close-up . . . New Penta-X Film . . . Our Birthday

Sheep Dip

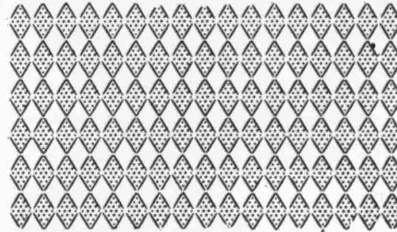


Do you waste 2spdflouroxenondexedrine? Don't pour it down the drain! We have developed an optical isomer of this much-maligned molecule, Damitol, which is the active ingredient of the most effective sheep dip in the country. For years, this valuable chemical was a worthless residue left from the distillation of 2,3 dibromochloromethylpentoxylhydrazine from fermented goose feed. Then H. Q. Ignatz, a night janitor at Dowdy Chemicals, in Podnuk Center, Montana, took home a bottle of 2spdflouroxenondexedrine in place of the sheep dip he had bought on his way to work. His mistake was not discovered until his sheep had already been dipped. The improved condition of his sheep was so remarkable that Kodiak Laboratories started producing it as a commercial sheep dip.

If you are interested in experimenting with this valuable medicament, you may obtain it for the reasonable price of \$50.25 a gram-atom. Just write to E. L. Pragla, Alaska Kodiak, Fairbanks 5, Alaska, and ask for the confidential report on "No-Slip Sheep Dip", or, if you must be obstinate ask for 2spdflouroxenondexedrine, or, Damitol.

Close-up

A break-through in micro-micro-micro photography! Using our old stand-by Ecchtar lens in conjunction with our new fine sub-atomic grain absolute resolution plates, the Kodiak Micro-Micro-Micro Laboratories have succeeded in photographing the grain structure of the best Ivy League Fabric. Notice the hitherto-undiscovered parallelogram orientation.



You too can analyze Ivy League Fabrics, as well as the latest Dior fashions. For helpful information, write or telegraph Alaska Kodiak Micro-Micro Labs, Nome, Alaska.

New Penta-X Film

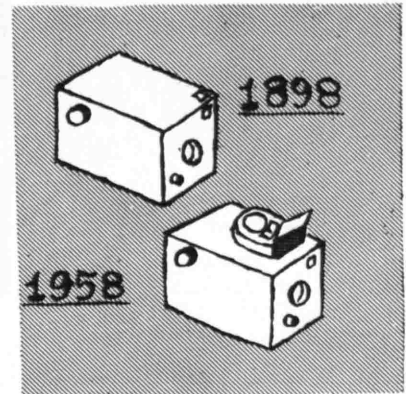
Now! The fastest film yet! Clocked at 295 m.p.h. (ASA 31, 786,336) This amazing sensitized material requires NO LIGHT! How do we do it, you ask? Well, patent limitations prevent our revealing the full story, (It's somebody else's patent.) but this much we can let out of the bag: we put certain phosphorescent materials into the film backing, and it emits its own light!

Beware: do not develop Penta-X simultaneously with ordinary film, as it will cause the ordinary film to become fogged. For some reason, Penta-X always seems to be fogged, anyway.

Available Jan. 31 in roll sizes No. 120, 620, 36, 24, 36. Come to your Photo Dealer prepared to pay at least \$299.88 per roll.

Our Birthday

Exactly 60 years ago this month, our illustrious founder, Kodiak B'hair, marketed his first practical camera, the famous Kodiak Brownie. Truly, this historical event was the beginning of Photography in America, as well as the rest of the World . . . our old slogan, "You push the button, we collect the money," became the byword of amateur shutterbugs the world over. Compare the simple early Brownie to the complex cameras that we produce to-



day . . . no uncertainty as to exposure, complete reliability, and ultra-fogged pictures are the byword in this modern Age of The Camera. Photography has become an integral part of life today . . . it keeps us informed, and gives us pleasure. It is man's window to the world that he may never see in person. What we're trying to say is that we've got a nice monopoly going, and we're still trying to figure out why we bother to advertise in this magazine.

Prices subject to change if you don't watch your friendly Photo Dealer Closely.

Kodiak
REDAK

ORGANIC CHEMISTRY-AN EXPOSE

Organic chemistry began as the study of the chemicals associated with life. As the "science" progressed, it became much less lively, until, today, it is merely the study of compounds of carbon (which is black). It is claimed that this was progress.

Really it is a good thing that the association of organic chemistry with life has been broken. Probably the people who have benefited most by the break were the users of formic acid, as the old method of production involved the distillation of ants. However, picnickers have suffered mightily, which illustrates that progress must be bought at a price. It was not the pressing need for a better source of formic acid that was responsible for the evolution of the subject, however. The old boys believed that every organic chemical could be produced only through the action of a vital force possessed only by living things. The church authorities at the time agreed with this notion.

Not only did the church agree that a vital force did exist, it was positively adamant about it and looked with disfavor upon anyone who tried to produce a "natural" product by synthetic means. Now, monks wear Nylon shirts, and Dupont is 204 and $\frac{1}{4}$. The monks may have been right, though, for modern organic chemists talk glibly of the HELL-Volhard-Zelinsky reaction, and if that doesn't prove something, what does?

Between the time of belief in the vital force and the production of Nylon, several important events occurred which somewhat modified organic chemistry. One of these was the enunciation by Kekule in 1858 of the ring structure of



As the "science" progressed, it became much less lively, until, today, it is merely the study of compounds of carbon (which is black).

benzene. There are various rumors that he first got the idea in a dream, but exactly what he dreamed is a matter of some dispute. One version holds that he dreamed that he saw a bunch of snakes and they formed themselves into groups of six and slithered around the hexagon. Another version tells of dancers holding hands and dancing around a circle. No one seems to have suggested that maybe Kekule was just smart. Whatever the original motivation for Kekule's proposing the ring structure, the idea has withstood the test of time, and, in fact, has led to the division of organic chemistry into two major branches - aliphatic and aromatic.

A concise definition of an aliphatic organic compound can be stated as follows: an aliphatic compound is any compound containing carbon that does not contain a ring of car-

bon atoms (although it may contain a ring of other atoms). Generally speaking, an aromatic compound is any compound that smells. It is seen that organic chemistry consists mostly of aromatic compounds. However, because of their importance economically, aliphatic compounds will be discussed first.

Aliphatics are further divided into many types depending upon what characteristic group the compound contains. For example, compounds containing the carboxyl group (COOH) are acids, even though many of them turn red litmus blue. This is compensated by the organic bases, containing groups such as NH_2 or OH, some of which are aloof to litmus of any color. To round the subject out, mention must be made of compounds, such as carbolic acid, that don't contain COOH and turn blue litmus red. Recently, it has been alleged that these

phenomena are the result of sneaky tricks of the litmus paper manufacturers and Senator Kefauver is investigating.

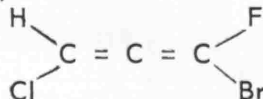
About the most important aliphatic compound is ethyl alcohol. Actually, this is THE most important compound except sugar and spice (because that's what little girls are made of, although it has been claimed that ethyl alcohol will assist in this process). Ethyl alcohol can be obtained in many ways, a few of which are synthesis from ethylene via ethyl hydrogen sulfate, fermentation from sugar using yeast, reduction of acetic acid with lithium aluminum hydride, and lying about your age. The latter method is the most common. Despite its great importance, ethyl alcohol is seldom seen in pure form, because a lot of it is denatured by adding such things as methyl alcohol and pyridine. Most textbooks say that this does not spoil it for many purposes, but they don't say what purposes it is still good for. Most of the ethyl alcohol that does not contain methyl alcohol contains juniper extract, fusel oil, essence of burnt oak, or, at the very least, water. The kind that contains only water leaves you breathless, and you can drive home unafraid - besides mama will never know. Ethyl alcohol also has many industrial uses, but these are of little importance compared to its main use.

As every Texan knows, the next most important aliphatics are the hydrocarbons. These compounds contain only carbon and hydrogen, but they do it in many tricky ways. There are two kinds of hydrocarbons - saturated and unsaturated. The saturated hydrocarbons have all the hydrogen they can take and they contain only single bonds, whereas the unsaturated compounds lack a little and they

got married. All the hydrocarbons are in the form of chains, some of which are branched and start with iso. Those that are not branched start with normal, which proves that it is more natural to keep to the straight and narrow. This statement will be disputed by most organic chemists. The biggest use of the hydrocarbons is burning, and it's a good thing, because most of them smell like gasoline.

Other aliphatics are the aldehydes and ketones, ethers (but that has been disproved), esters, amides, and amines. These are not very important except for ten minutes on Fridays. Most of them are called derivatives of the above compounds, which means that hydrocarbons are integrals. Most organic chemists will not dispute this, but start mumbling something about re-arrangements and stereoisomerism.

Instead of attempting to explain about derivatives and integrals to an organic chemist, it is best to accept him at his word and talk about stereoisomerism. That means that some compounds rotate the plane of polarized light either to the right (dextro) or to the left (levo). In order to do this astonishing feat (if you don't think it is astonishing, try it), the compound must have a center of assymetry. Usually, this will consist of a carbon atom with four different groups bonded to it, except on quizzes, where the answer is



Of all the types of organic compounds that show stereoisomerism, perhaps the most interesting are the sugars. These are certainly the sweetest. (Forgive me.) Ordinary cane sugar is called sucrose by chemists (they like to be mysterious). When sucrose is treated with

acids, alkalies, or the enzyme, invertase, it is converted into a mixture of glucose and fructose. This mixture is called invert sugar because it gives a left-hand rotation whereas sucrose gives a right-hand rotation to polarized light. All of this information is pretty useless, because most invert sugar winds up in candy anyhow and never gets to see polarized light, even with Polaroid right next door. Even so, it's better than the soap.

The only other important group of aliphatics is the proteins. This group is important because we are made out of them (some will question whether they should be in Course XVIII). Proteins are not understood very well, and that is good, because quizzes are hard enough now. It is certain that proteins are constructed out of amino acids (see paragraph 6) but how and why are still valid questions. Linus Pauling claims that the proteins in chromosomes are spirals, and that certainly would help the genes to get upstairs. There have been experiments that indicated that proteins could be formed out of earth, air, fire, and water, during lightning strokes. The part played by thunder is obscure.

Now that the aliphatics have been thoroughly covered, something must be said about the aromatics. Besides smelling, they are very similar to the aliphatics except that they contain rings of carbon atoms. They can be baffling because of the many kinds of rings that can be made. Try it some Sunday with Fischer-Hirschfelder models. It is really fun, especially the terpenes. Since I have mentioned the terpenes, I will say a little more about them. One of the important terpenes is pinene. Pinene

comes from pine trees and is found chiefly in turpentine, which is a naval store, for some reason. Turpentine used to be used in paint, but now they use water because latex paint has been developed, which is a naval store, for some reason.

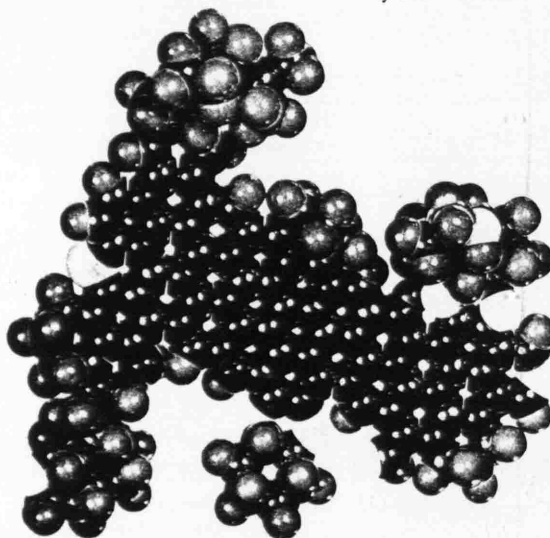
Essentially, this concludes the chemistry of carbon compounds. However, no account of this subject would be complete without mentioning the great chemists who have built the "science" to its current state.

One of the first of the great organic chemists was Antoine Lavoisier of Paris. He made the first quantitative measurements of combustion, but he became so excited that he lost his head. Friedrich Wohler was the first to create an organic chemical, urea, out of an inorganic chemical, ammonium cyanate. Nobody paid much attention, and he started to tinker

with aluminum, but Hall beat him to it. Since then, this has been known as the Hall effect. A more important application of the Hall effect is trying to get to the Bursar's office at thirty seconds to two with three professors ahead of you.

There have been many other famous organic chemists—too numerous to mention, in fact. However, two more deserve a

brief note before this article is ended. James Michael Curley went down in history as the one who investigated the mysteries and uses of beta-indole, and quite successfully, too. And last, but not least, there is A. E. Neumann, organicist extraordinary and author of the statement, "You ferment for me," when referring to his yeast cells.



DE 8-8882

麗香飯店

HOUSE of ROY

Real Chinese Foods

OPEN DAILY FROM 4 P.M. TO 2 A.M.

FOOD ORDERS TO TAKE OUT

12A TYLER STREET

BOSTON 11, MASS.

*Charlie Mun
Laundry*

Complete Laundry Service

88 MASS. AVE
BOSTON

Telephone
KE 6-9472

NEAREST LIQUOR STORE TO MIT
(EVEN NEARER BY PHONE)
WITH THE KINDS OF LIQUOR, BEER, AND WINE

TECH MEN PREFER

BOYER'S BOTTLED LIQUORS

480 MASS. AVE. CAMBRIDGE
Opposite Moller's

ICE CUBES
GALORE

FREE DELIVERY
TR 6-1738

PARTY
PLANNING

ANTI-GRAVITY

What is this new force called antigravity and how will it be used to help man reach the stars? It is a new force found to be a property of antimatter and discovered by Dr. Moishe Kushmir.

by Ormsbe - ziak von Forshtearess

As man attempts to reach the heavens, pushing out from his shrinking world, he realizes the need for tremendous energies and powers to do his bidding, and to move his space vehicles. As man faces the possibility of a global war he seeks a weapon so terrible, that if used it will eliminate the entire universe. As man faces automation he seeks new sources of material so that mechanization can dominate him. As man moves in this direction it is apparent that the only leader for the future is the scientist and all the rest of humanity must pay homage to their great leaders. It will be the scientist who will tap the resources of power and releases the energies of the future. Already he is doing this and has recently provided a way of sending a rocket from here to eternity on a kilogram of fuel. This new fuel uses the force, created in the laboratory, called: antigravity.

The discovery of antigravity was implied in the discovery of gravity. In the year 1683, Isaac Newton gave man the answer to the question of why man was able to survive on this Earth. Every school child knows this law, now immortalized and named for Newton, being called the Newton Law of Gravitation. It, simply stated, is that every particle of matter in the universe attracts every other particle with a force directed along the line joining the particles, directly proportional to the product of their masses and inversely proportional to the square of their distance apart, the coefficient of proportionality being known as the gravitational constant and generally denoted by G.

$$F = - GM_1M_2/R^2$$

This, of course, was not the

only contribution of Newton. Only one other law need concern us here and that is that every action has an equal and opposite reaction. Thus antigravity is logically implied in gravity and should be:

$$F = - GM_1M_2/R^2$$

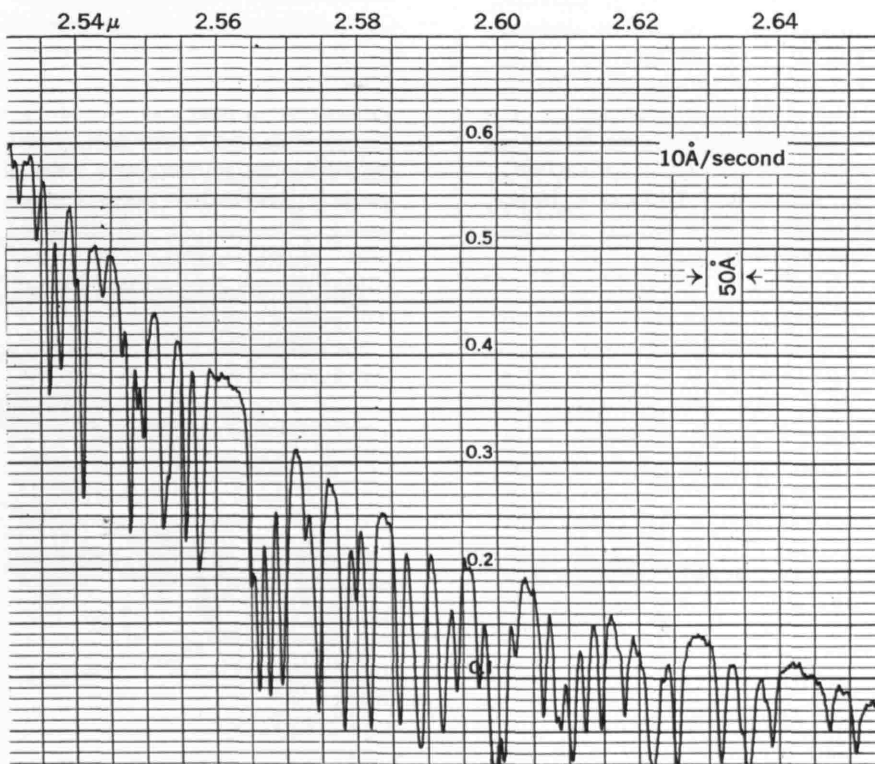
It was not Newton who actually gave us the law of antigravity. It was, rather, a little known scientist, Moishe Kushmir. Several years after Newton's laws were published and accepted, Moishe reasoned from Newton's third law and actually postulated antigravity. Deriving it from first principles he formulated it as:

$$F = - GM_1M_2/R^2$$

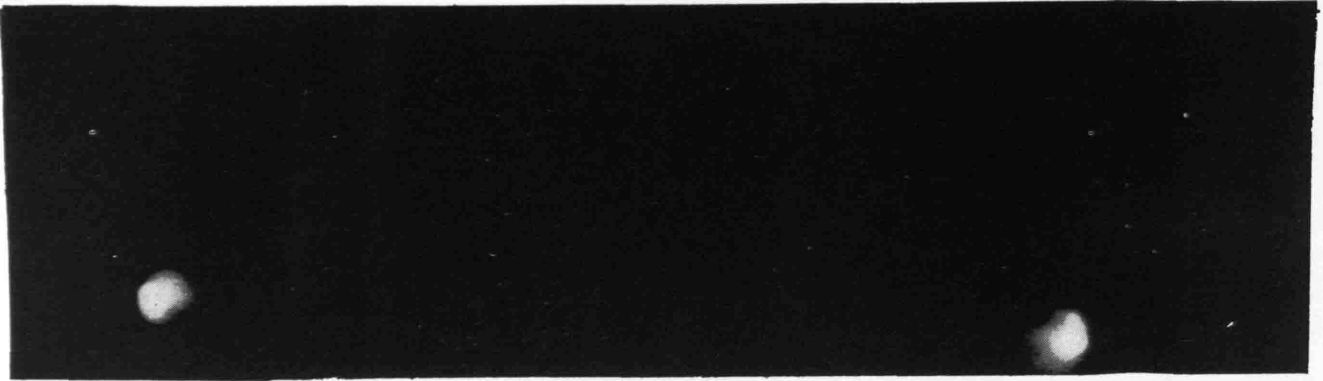
In his little Lithuanian laboratory in the town of Gateavak, he performed the classical falling object experiment and determined G to be 6.2 feet

per second per second. Later theory and experiment tend to be more accurate and set the value of G at 32.2 feet per second per second. He had also to verify the laws of action and reaction, which he did, severely wounding himself. He continued in experimentation first with spring balances and then with pressure systems. He determined what he called the antigravitational constant of heat, that caused it to rise. He was forced to give up his research when it became apparent that his family would starve if he didn't do something constructive in order to make money.

Since Moishe Kushmir's time little has been done with antigravity, but several recent discoveries in the 1940's showed that his work should not have



Experimental data obtained by Dr. Schmotzig in his investigation of antigravity phenomenon, showing the Krankheit principle.



Above: Proton and Antiproton being propelled away from each other by the force of antigravity; below: the annihilation taking place as a positron and electron interact.

been neglected. These new discoveries were antiparticles and antimatter. The characteristics of antimatter are exactly opposite to those of matter-matter. It has negative weight, occupies negative space and carried a negative charge. However its existence is real and its actions have been observed. It also obeys all the laws of conservation of energy and momentum.

Being opposite to matter-matter in every respect and having all negative properties, it seems only logical to deduce that it has antigravity. The principle of antigravity being associated with antimatter is the Krankheit principle formulated by two German scientists, Dr. Krank and Professor Heit, in 1947. Their theory may be expressed as

$$F = - GM_1 M_2 / R^2$$

Recently Dr. Schmotzig, in Prague, has performed exact experiments to show this effect. He sent photographic plates to high altitudes in a balloon and recorded particle interactions. Dr. Schmotzig observed that in all cases that the antiparticle first penetrated the photographic plate. The antiparticle then attempts to avoid the matter-matter; it dodges and runs, leaps and hides, and in attempting to escape penetrates deeper into enemy territory where it is annihilated by the great concentration of matter-matter. His conclusion was that the Krankheit principle is essentially

satisfied and should be represented as the negative of:

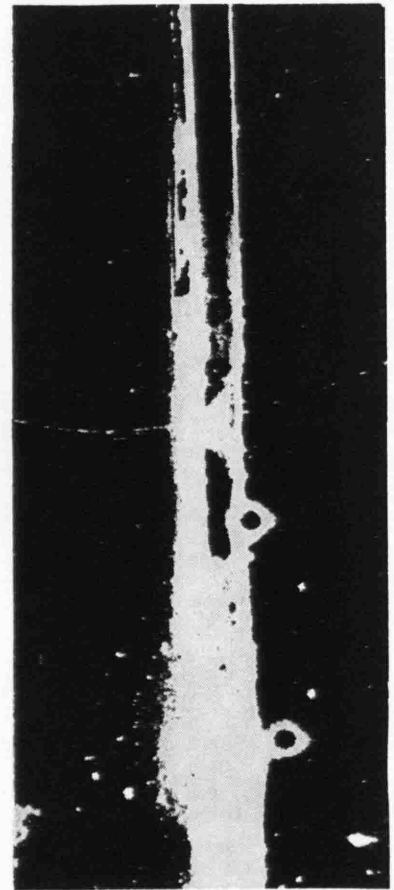
$$F = - GM_1 M_2 / R^2$$

He could not explain this heading into a matter-matter region however.

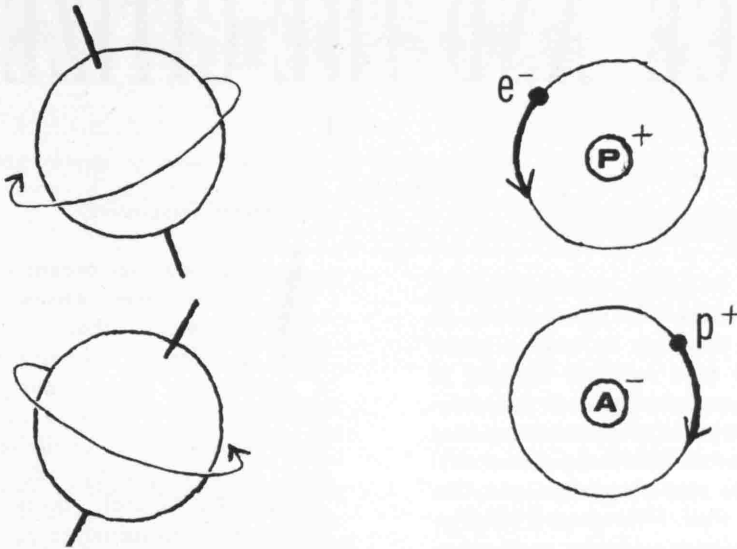
Finally from Russia came the news that two Russian theoretical physicists had the answer. Drs. Ahchkalodgekey and Ahchkalaireya introduced the Negative Sign Convention. They showed that a negative sign can be introduced into any system and convert it to an antisystem. The Negative Sign Convention clarifies the presently known properties and predicts those not yet investigated. As an example, consider the experimental data found by Dr. Schmotzig, that the antiparticle invariably travels the wrong direction in its escape from matter-matter. This is solved by the Law of the Negative Sign Convention.

We asked the question, what gives antimatter its properties. It was suggested that antimatter involves a different set of energy transformation rules but this has not been confirmed. Along this line, it is believed that where matter-matter radiates, antimatter absorbs. There has been no data proving that antimatter radiates when matter-matter absorbs. This means that all energy is contained within antimatter. The consequences of this can be seen to be far reaching.

Putting the theory to practical use can be as difficult as setting up the theory, as there



may be no apparent need for the theory in the first place. However, in the case of antigravity, its need was recognized long before its discovery. Its use was first postulated by H. G. Wells. He felt that it would be possible to eliminate the action of the gravitational force and elevate a space vehicle with a minimum of physical effort by using antigravity. There is also in sight a long list of classified military uses. It might be interesting to note that one A.



Properties of antimatter: left, antimatter has spin opposite to matter-matter. This is one source of its antigravity properties. Right: the antiatom has a positron moving around an antiproton while the normal atom has an electron moving around a proton in the opposite direction.

Einstein calculated that one kilogram of antimatter exerts a force of repulsion at a distance of one meter from the Earth of 4×10^{22} dynes.

There are only two minor problems remaining to be solved before antigravity is put to actual use. We here at the laboratory feel that it is only a question of time now before the break-through comes. The first is that nasty-matter always tries to annihilate antimatter.

The second is that if the annihilation takes place, using one kilogram of antimatter, 10^{16} joules of energy will be released. This was also calculated by one A. Einstein. We are working now to reverse the Negative Sign Convention, or contain the liberated energy. Soon these problems shall be solved and science shall again march on to even greater heights, conquering new worlds and violating the natural laws.

MASS-TECH COMPANY
27 ANDERSON STREET
BOSTON 14, MASS.

Memorandum to ambitious technical personnel:

We have recently perfected a device consisting of a spatio-temporal exponentially modulated regenerative cyclic turbo-encabulator in series with a parallel combination of:

1. a zirconium shielded non-Euclidean variable frequency transistorized hyperbolic digital inter-ossitor with a semi-permeable and intrinsically diamagnetic ytterbium-plated monopole radiating oscillator and a preter-Newtonian isopiestic inver-gyroscopic tenebrascope, and -

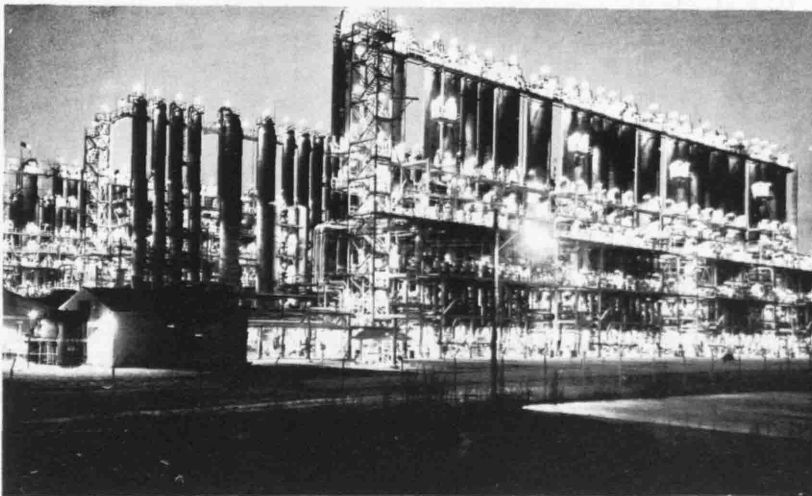
2. an electro-mechanical Jacobian self-attenuating hyper-refrangible metapsychometron with a logarithmically decelerative relaxation system and a non-velocityized inverse treamy pipe.

It is powered by an asymptotically compensating hypo-elliptical discontinuously diverging collimator with the sidereal fluctuation monitored by a sporadic nucleodynamic periphthalactograph.

We wish to install this in a readily portable isolaterally truncated minor rhombicosadodecahedron with a semi-maximal transverse diagonal less than 10^{-4} myriameters. The potentialities of this arrangement are, of course, enormous.

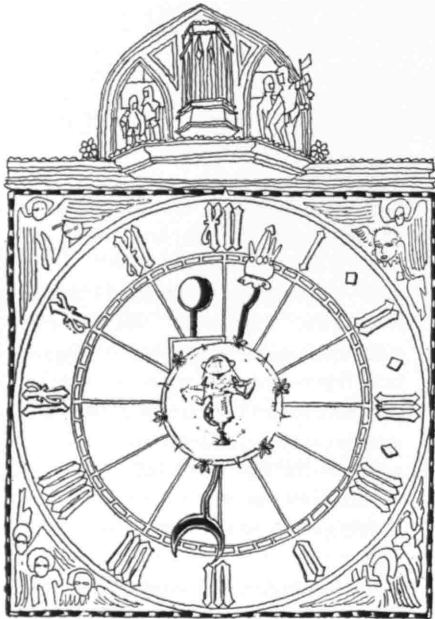
All meteorological structure, thermoelectronic, aerochemical, and psychonautical engineers or metallurgical textile and nucleoconstruction technicians interested in working on this project should send complete resumes.

Dr. B. S. Schneearbeit
Director of Engineering Personnel



The high energy laboratory at the Sam Houston Institute of Technology where antigravity is currently being investigated.

PSEUDO SCIENCE AND THE CITIZEN



New Standards Agreed on for Space Technology.

At a recent colloquia held by the Aeronautical Engineering Department, an eminent Scientist has revealed a new standard of rocketship thrust. Inasmuch as interplanetary vehicles will be propelled through space for periods of time which will be measured in years, the thrust of these ships will be extremely small. All previously used units of thrust are much too large for measurements of space engines. A new unit has been proposed which is defined as 10^{-8} gram-centimeters second, henceforth to be known as one Mousephart. One leading rocket manufacturer has already written to the National Bureau Standards for a standard mouse with which to calibrate their engines.

Pear Shaped Mutations:

Leading anthropologist, Alexander Grapenuts, is planning to read a paper at the next national meeting of the American Medical Association in which he postulates that the recent hula-hoop craze will lead to pear-shaped people. He says that "the rapid oscillatory motions of the post gran-ganemous region of the solar symponious are causing the espfossep to rangify." If this is true, he goes on to say, it is an OBVIOUS step to triangular, or pear-shaped human beings.

Elements Confirmed

Dr. Linus Pauling read a paper at the recent Chemical Society meeting in South Boston which will have an effect upon the teaching of chemistry. His research of the past twenty-seven years has lead to the discovery that there are five elements in the universe instead of the four which are understood today. Added to earth, fire, water, and air is Dr. Pauling's discovery of GERITOL.

NAME AND PURPOSE OF FIFTH DIMENSION ANNOUNCED

Researchers at the Princeton School for Advanced Studies have named the fifth dimension Essence. It is filled with MDC and City of Cambridge parking tickets.

Biological Discovery:

An expedition recently returned from Africa has announced that it has fairly conclusive evidence that a man-eating plant flourishes near the head-waters of the Zambezi River. One of the members of the party, the late Adolph E. Grundt, made the discovery. Unfortunately, the other members of the group were not able to decipher his notes as they were partially obscured by a darkish red stain.

MITRE CORPORATION ANNOUNCES LAUNCHING OF MOLE

At 6:23 P.M., on Dismember 42nd, the first MOLE (Molecular Orbiting Low-Level Explorer) was successfully fired from its sinking site in Cambridge, Mass. This sinking was held in conjunction with the Geofizziki year. The MOLE sank into orbit, reaching a terminal velocity of 24,600 mch's. The instrumentation, which is measuring low level Delta rays, Subterretial turbulence, and the Solar constant, was reported to be functioning properly. The fact that the first sinking was successful reflects on the spirit of cooperation that was exhibited by the engineers, phvsicists, plumbers, biophysicologists, pseudochemists, pschonautical technicians and members of the International Brotherhood of Teamsters(local 342).

PRESTRESSED GINGERBREAD

Gingerbread is made stronger by compression; spaghetti by tension. These amazing properties combined make unstressed gingerbread houses old-fashioned.

by Frank Loud-Wright

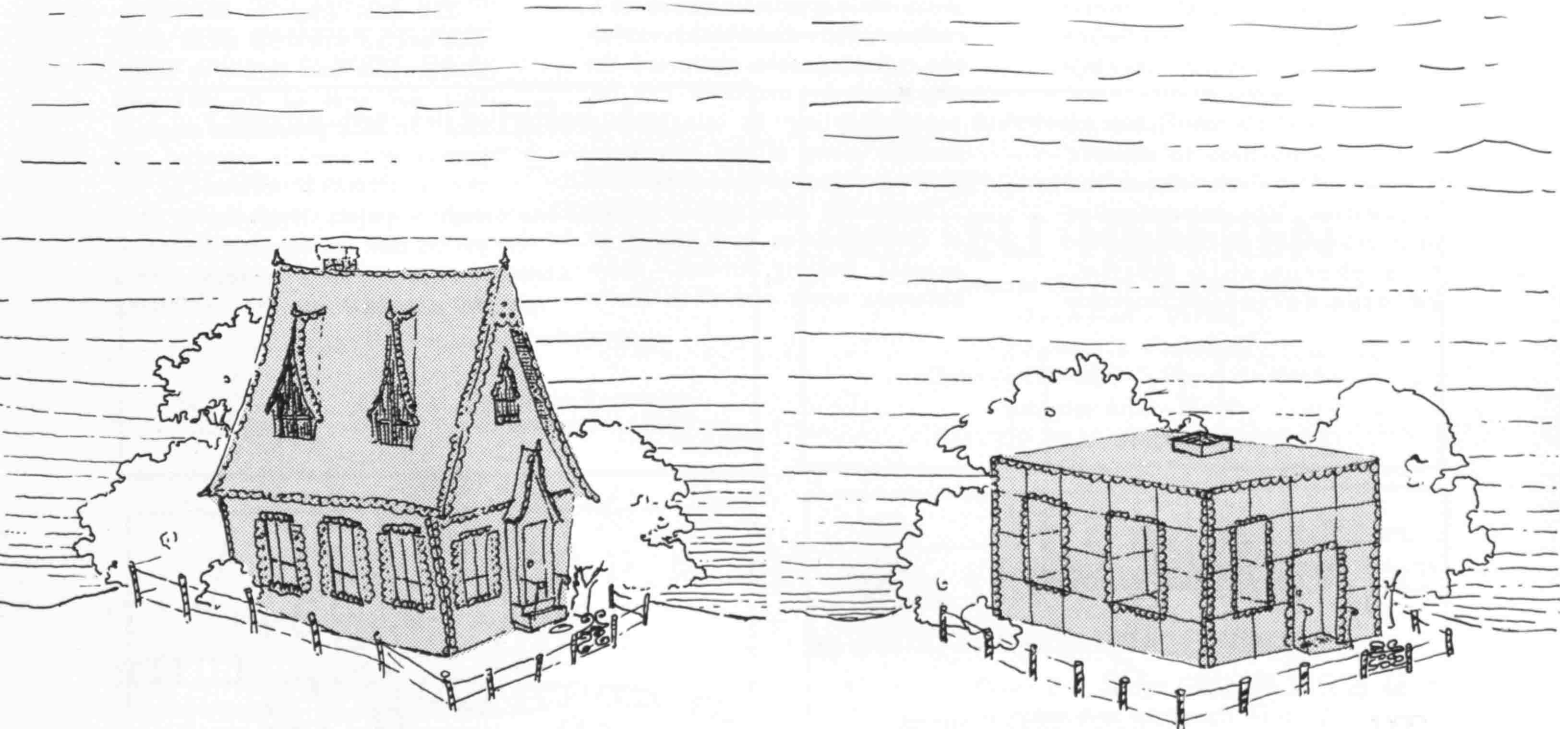
A revolution in gingerbread housing is ushered in by the radical innovation of prestressing the gingerbread. Discovered less than two weeks ago accidentally by Simon B. Halovar (when his laboratory assistant sat on his lunch) this is already lauded as one of the greatest advances in construction since laminated chewing gum. Hundreds of thousands of new uses are being evolved every day. Skyscrapers, triumphal arches, monumental

obelisks, funeral pyres, sacramental temples, and atomia have been built of the new wonder material at a net saving of \$4702.98 over the cost of similar steel structures.

The toughest problem to overcome in the development of prestressed gingerbread was the lack of strength in spaghetti. This was alleviated by Mrs. Finesse Pastafazul who cooked this spaghetti in liquid starch, thus formulating his tensile strength spaghetti.

The spaghetti in its limp state is passed through chunks of gingerbread laid end to end. The spaghetti is then stretched to three times its normal length and knots are tied at each end. It then hardens and compresses the gingerbread into a compact building material.

Perhaps it will not be too far in the future before our highways are made of the new wonder material which can be frosted or coated with plastic to keep out the rain. Yes, prestressed gingerbread is here to stay.



OLD STYLE GINGERBREAD HOUSE on left made of thinly iced slabs will soon be entirely replaced by combination of gingerbread chunks and high-tensile spaghetti.

THE MIGRATION OF AUTOMATA

How do automata migrate? Though this question still cannot be answered, recent studies have revealed the basic structure of the behavior patterns of systems with artificial intelligence.

by S. L. Jacobowski

A basic characteristic of all animal life is its ability to move. When this motion exhibits a periodic tendency it is called migration. Many forms of animal life exhibit this periodic motion. Recent observations of the movements of the class of man-made machines, commonly called automata, have indicated that these devices behave in a manner similar to migratory animals. The class of artificially intelligent fauna which best exhibits this property is *idiotus detroitus*.

We are very fortunate in as much as *idiotus detroitus* is quite common in the United States. It seems as the climate is beneficial to the development of this species.

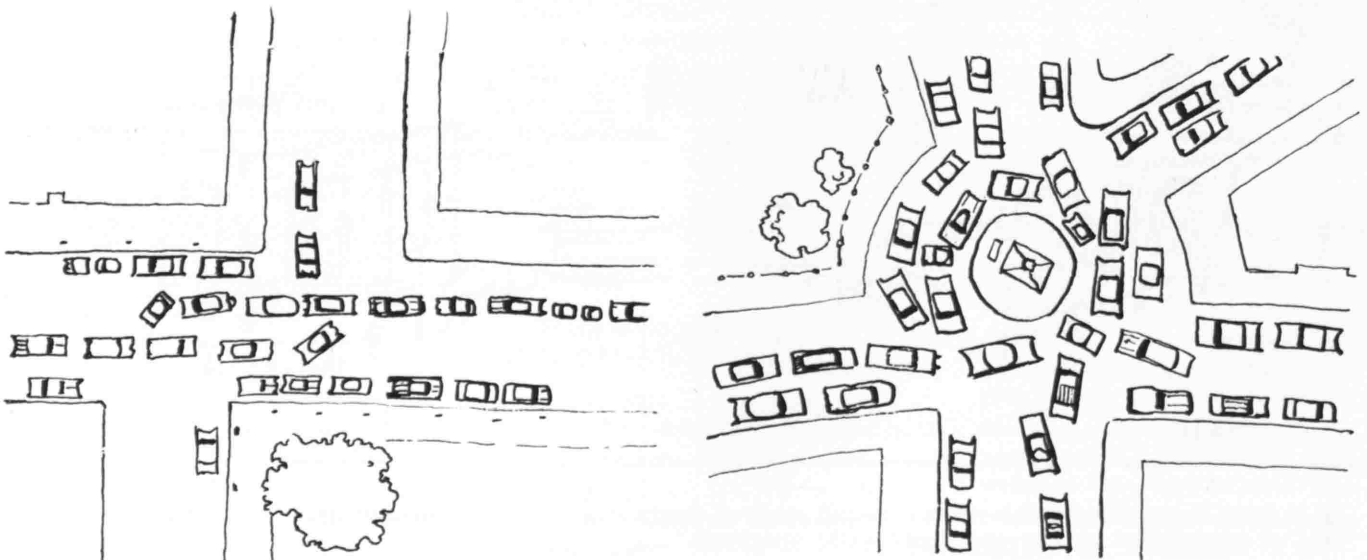
At present we are fortunate to be in a position to observe a stage of evolution by means of mutation. The present stage of development is characterized by a phototropic behavior. *Idiotus detroitus* responds

slowly, but surely to the sun's motion around the earth. Within a few hours after the reception of the first stimuli large numbers can be seen starting their regular daily journey. Something yet unknown seems to attract them to certain centers of accumulation. It was first believed that feeding or watering areas were in these centers, but closer examination has shown that, while some of the centers may have been such areas in the past, the sources of the necessary nourishments are invariably found outside of these centers. However, these areas do serve as centers of a rudimentary distribution system. During this phase of the migration the automata can be seen crawling in single file through many of the labyrinth-like passages in these centers.

Following this initial phase of the migration is a period of general mulling around. Some automata enter and some leave

the centers but the majority seem to travel in endless circles, never reaching any destination. The slow motion made during this stage can be summarized by three laws: 1) It is impossible to get someplace in ten minutes, 2) It is impossible to get anywhere in ten minutes, 3) It is impossible to even quit in ten minutes. Recently there has been a mathematical formulation of these laws in a statistical form that involves the logarithm of the probability of finding any particular automata in a specific location.

The next stage in the migration occurs when the mean solar energy flux has fallen to about five per cent of its maximum rate. In this phase the original course of travel is retraced and the automata returns to its nightly roost. It is during this period that we observe behavior that inconclusively proves that the automata are not exhibiting



what is commonly called "intelligence" in their decision-making choices. During apparent periods of serious intent the automata can be seen to engage in primitive games. In one type of game each individual automata places its front facet as close to the rear appendage of another automata, thereby forming a chain. These chains try to break through each other. Occasionally, two very tough chains will try to break through each other while in the midst of a spiral maneuver. In cases of extreme determinism of the members of the chains, this pattern has been seen to remain until starvation threatens a member.

Another form of game played by the automata is a type of tag. There is a large circular area (a large post or multi-colored light may serve just as well) which each participant must touch, after which they are permitted to continue on their way. A layer will form on the inside which tries to block the outsiders from entering the inner layer. Meanwhile the outer-layer refuses to permit the in-

side layer from leaving. We again have a struggle for power which can often result in the freezing of the entire area, thereby reducing its effectiveness as a channel of flow for migration.

When travelling along straight channels the *idiotus detroitus* exhibit collective phenomenon commonly attributed to compressible fluid mechanics. When the ratio of *idiotus detroitus* per unit area of channel is equal to the number per unit area allowable in storage, the flow is said to be critical. Supercritical flow has been observed, but only in cases where the channel passes through a section of minimum cross section area (as in a supersonic fluid nozzle). At low flow rates the *idiotus detroitus* proceeds in an orderly layered flow. The layer nearest the boundary of the channel proceeds slowest, the rate of flow increasing as the distance from the boundary increases.

For channels that have a Freedman number, determined by the ratio of inertial stresses to shearing stresses, over the

critical value, the motion breaks down, and turbulence is superimposed on top of the orderly teeminar motion.

So we have seen some of the interesting patterns of behavior which indicate that automata can be considered to be animals. The neurological implications of the similarity between automata and biological systems indicates that new areas of knowledge are available to man. While the particular species that are available for study, are examples of rather low stage of development, we have great hopes that in the near future progressive mutation will result in intelligence that is comparable to man's. The greatest hope for beneficial mutation lie in the lesser known European species, as they are presently uneffected by the self-destruction-through-unfunctionality blight which has begun to strike at the species found on this side of the Atlantic. We are looking forward to the day when automata opens up a new world where man is able to truly control his destiny.

Charlie-the-Tech-Tailor, Inc.

"Est. 1918"

71 Amherst Street EL 4-2088

Opposite Senior House and Dorms
Press your suit

Have Mend your clothes

Him Sew on Buttons

Dry clean your clothing

Laundry Service Available

Shoe Repairing

N.B. He is noted for the finest work at the
lowest Prices

FOR: Electronic and Radar Parts
and
Electronic Components

SEE: ELI HEFFREN

Special Service to Tech Men

Tech Man's Dream

Engineer's Paradise

Open - 8:00 - 4:00 5 Days A Week

Saturday 8:00 - 12:00

321 - 329 ELM ST., CAMBRIDGE

SQUASH RACKETS

Large Variety - All Prices

RESTRINGING A SPECIALTY

Sneakers ... Shorts ... Shirts ...

SKI EQUIPMENT

TENNIS and SQUASH SHOP

67A Mt. Auburn Street, Harvard Square

Phone TR 6-5417



**HONG KONG
CHINESE RESTAURANT**

SPECIAL LUNCH 11 A.M. to 3 P.M.
SPECIAL DINNER 5-9 P.M.

Open Fri. & Sat. 11 A.M. to 1 A.M.

Sunday Through Thursday

11 A.M. to 12 Midnight

ORDERS PUT UP TO TAKE OUT
AIR CONDITIONED

1236 Mass. Av.

Cambridge

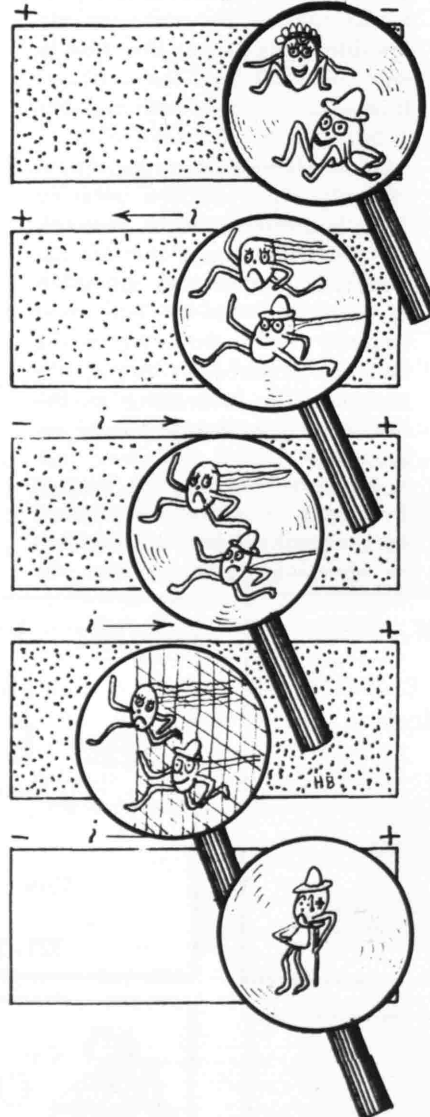
UNiversity 4-5311

THE CONTROL OF SEX

For thousands of years men have been trying to predict or control the sex of their offspring as well as of winter. It has been discovered that already in 10,007 B.C., in a cavern, some genial prehistoric physician was doing research about this matter, for they believed, as the drawings show, that the child would be either a boy or a girl, with a remote chance of neither. A Chinese manuscript, thought to be 4,401 years old, suggested that activities between man and wife should be very much concerned with the later appearance of a child under the roof of the Tea-house of the August moon. An Egyptian papyrus of about exactly 2,237 B.C. observes that a pregnant woman who carries a serpent bracelet around her neck and faces the sun at noon will have a boy. According to Aristotle, placing the marriage-bed in a north-south-west-east position, under the window, in a rainy day, will favor the conception of an amphibian child. The list of these beliefs could be extended to infinity, should we not know that infinity is not a finite number, therefore being impossible to extend anything to it.

The importance of knowing the actual sex of the child is most valuable in the anti-civilized countries and states, for the male heir can carry on the bad name of the family, while the female heir just loses it more and more. On the other hand, if some control could be made in this matter, general sciences would gain as much as big industries and farms. Finally this would be of great importance to eliminate hereditary defects such as intelligence, good will and ability.

What is the scientific history of the subject? It begins with the discovery of the genetic mechanism. As most of us recall from the magazines we read



Behavior of sperms in the Mendeloff vessel.

while our parents weren't home, among the pairs of chromosomes in the cells of mammals, and other humans of the same species, there is a special, very special, pair which differs in males and females, called

the fe pair. In the female, and around, the pair consists of X chromosomes, which were given their name in honor of the famous scientist Pterodactyl the Third. These X chromosomes, in the pair, consists of two X chromosomes, adding up therefore to a pair of two X chromosomes in a pair of X chromosomes. In males, the pair of X chromosomes is not made of two chromosomes X, but of one X chromosome and one Y chromosome, therefore not forming a pair of X chromosomes, but an association of one X chromosome and one Y chromosome. This last one has its name because of the doubtful existence of the importance of the actuality of its truthfulness. When gametes (from the Greek: game and the Latin: lets play a . . .) are formed, the chromosome pairs splits, splits, spits, plists . . . divide, so that each ovum or sperm contains only half the usual number in a pair of two chromosomes. Egg cells obviously contain X chromosomes and no Y chromosomes and no Y chromosomes and sperm cells obviously contain either and/or an X or and either a Y chromosome. It is then very easy to understand that the sex of a child or other animal depends on the type of sperm cell that fertilizes the egg cell. As the chromosomes divide we have three X chromosomes and one Y chromosome that can combine, two by two with three other X chromosomes and one Y chromosome to form XX or YY chromosomes, determining the sex of a child. If they combine XX the offspring will be a male and if they combine XY, we obtain an off-off.

In any case, the obvious way of continuing the research was to look for a physical or chemical method of distinguishing the two and combining them as told by the headmaster.

A number of methods have been tried. They all failed. But it will be interesting to find out which they were. One method was to find a selective poison which would inactivate one type of sperm cell and not the other, whether an X chromosome or a Y chromosome. The poison found eliminated both and for the exact graphs and statistics on this subject the reader will report to the excellent work written by Dr. Donald Von Silberman in 1927 called: "The world birth crisis and its effects on the population."

A second approach which was widely publicized in the late late 1931 was concerned with the acidity or alkalinity of both cells when they enter in contact. As we well know, given the coefficient $dni \text{ nm} \times H_2O \text{ K R T} \log(x\text{-op. } 3.567)$, where F is the distributivity constant and given the relation between the radius of the upwards circumference of the late trapezoid, and the pH of the solution of concentrated water, an alkaline environment favored the conception of males, unless it would favor the conception of females. A number of workers performed experiments on a variety of animals such as rabbits, diplocoducus and ferocius domestic ants, with a relative success of fifty-fifty. Unfortunately the results were conflicting and the scientist who effectued such experiments tried it on himself. She has married since. By early 1932 interest in the method had died out. died out.

There have been many attempts to separate the two kinds of sperm physically. One of the methods, unsuccessful

MORTALITY	BIRTH	MALES	FEMALES	NONE	BOTH!
Ø p. 235	02 (2%)	.0225 (2%)	.03 (3%)	Dx	Nx
ψ .999	EAT	-AA	NICE %	COENT	1 + Ax
mn .663	WOM	IT	?	P.U.	Ax
89567	.1	.6	ICK!	Sp.D.	?
OH	MORTALS	THAT	WE	.6432	170,000,000
CADA	LENA	MADA	LENA	HOOPEN	STEIN
+	←	HE "	ØBE	QRN	[X,Y]
BLANK	IS	+	TAD	POLE	.228107
TECH	—	—	V	.7654	.54321
H	A	R	.0211	R	.1234
—	BZE	II	A	0	.4321
I	LIKE	IKE	.6432	976	.6987
FF	X	WAS	...	∞	#?
KIL	ROY	VOO	HERE	.6432	1.6
10123	THURS.	.056	.3 (2%)	EIN	834
32101	ψ NO	DOO	WIE	BABY'S	GIVE UP!
87643	Ø +	1ST	.6432	NACHT-	NEVER
11111	LEBEN	.1111	.9728	HEMD	LIEBEDKH
DAS	2222	.32	.87	THIS?	.34210
—P—	0	0	READING	∞	To DO
∞	+∞	YOU	∞	WORK	5.01
6OTO!	ARE	GAT	GOT	HN	8.01
WHY?	Ø/X	YOU'VE	21.01	.8762	7.6543

TABLE
OF
RESULTS
OBTAINED
BY
THE
AUTHOR
IN
HIS
SUCCESSIVE
EXPERIMENTS

but meritorious, has been to shuffle them with an egg-beater, but the accuracy of such a device is far from bringing definite results. Another way is by means of the centrifuge. Here the hope is that the X chromosome are sufficiently different in size and good will to move outward at different speeds without splashing on the floor of the laboratory. For this effect a net was used at the end of the centrifuge but for years the cells have been escaping at the other side, were the laboratory assistant is not standing. However a method used by a Dutch pachidermist gave satisfactory results: he introduced only Y chromosomes in the tube to a certain critical speed and awaiting the cells at the end of the tube he would get only Y chromosomes. This method of separating identical matters has proven to be of invaluable prize in late chemistry and is still applied in most of our universities. But it didn't show satisfactory results after a certain

number of speeds and experiments, because by introducing only Y chromosomes in the tube the Dutch pachidermist never could separate X chromosomes. A similar method applied in Far-Patagone with both X and Y chromosomes was most unsuccessful and condemned by the Academy of Science of Close Patagony and suburbs. This method would introduce X and Y chromosomes in the tube. However the power supplied to the centrifuge would be too weak, given the conditions of temperature, and the centrifuge had to rotate for nine months. By this time the child was dead, for the tube wasn't large enough. No solution for the problem was found by the scientists of Far-Patagony.

A woman biochemist in U. R. S. S., Mrs. V. N. Degaulschkaia, in 1945 began to publish a series of papers about a physical method of separation which did seem to work. As so often happens usually every time nonetheless, her discovery was purely accidental. In the course of investigation of the

chemistry of rabbit spermatozoa by the method of electrophoresis with retroactive purification of the metabolism in the structure of chromosomes' desoxyriboneucleic acid, to see their mobility in solutions of varying acidity and alkalinity. In this technique (see our issue December, 1951, on "Electrophoresis with retroactive purification of the metabolism in the structure of chromosomes' desoxyriboneucleic acid) the cells are placed in a little box called Mendeyerfoffh vessel which a positive negatode at one end and a negative positode at the other end, the remaining ends being neutral. The solution is suspended from the roof, and can have adjustable values of Ph.Ds', or hydrogen ion deuterion concentrations. As the Ph.D. is changed the cells move from one room to the other, towards one pole - South or North. Or, rather, that is what they were expected to do. To her surprise, and ours evidently, at certain values of the Ph.D., the cells didn't move at all. The papers on this subject are quite interesting and the most famous one is undoubtedly the one before the last issue of Mrs. V. N. Degaulschkaia, a diary called: "Why in heck did I forget to put on the current?" Her last paper is very dramatic and tells us about her experiences later on. This valuable document can be found in most libraries and is named! "Twenty years in Siberia."

Nevertheless her discoveries in this field led to more experiments. Obviously there was something different about two different types of chromosomes or they wouldn't be called different. Could that be the long-thought distinction between the X and Y chromosomes? To test this idea some ideas were carried on in our own laboratories in the Biological Naval Academy of Switzerland: three batches of rabbit

sperms from a Nendeyerfoffh vessel were collected, one from the negative positode, and one from the pocket of my assistant the eminent Dr. Ellerys Stonewall. We inseminated (from Latin: seminar, artificial injection of subjects) three does one with each batch. Negatode sperms produced six offspring, all females. Positode produced two offspring males and a dog, whose X chromosomes had been introduced by error, the labels on the X chromosomes being mixed with some other. His sex was undetermined, and we stamped him as male, with the benefit of doubt, and to round out our figures in the experiment. The pocket batch produced three male and three female dwarf rabbits, better known nowadays as pocket rabbits.

Encouraged by these results we repeated the experiment many times in the last 10 years, with an overall rate of success of 50% and a failure rate of 20%. The technique has been refined to the extent that we are almost rating a 30% failure for a 60% success.

One of the difficulties of such an experiment consists in determining the sex of the new born rabbit, by simple inspection. So the off-spring are killed and their tissues examined at the microscope. If it turns out that the rabbit is not a female, very little doubt is left

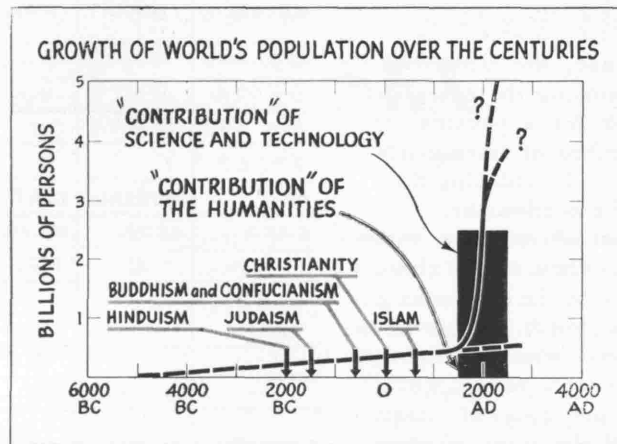
on what its sex is.

All told we have had 237 births in 64 litters. We predicted the sex of the offspring correctly in 529 cases for an average of 67.7%. Considering the sexes separately there were 64 successes out of 43 for females, in a total of 71.3% and 51 out of 35289560 for males in a total of .000000000000008 %.

Therefore, on the whole, the evidence that the two types of rabbit sperm can be separated by electrophoresis is convincing. We have also begun to work with other animals. At the moment we are trying to separate nightingale sperms. On the other end Dr. Ray "Sugar" Thornborn has reported a great success with human sperms, but his results lack accuracy. The only man he had as experiment-test is still alive or already flying.

These experiments in a whole have aroused a great interest among dairy-cattle breeders. Should our methods be conclusive and in the near future we will drink artificial milk from a male offspring rabbit. Although a good deal of work is still to be done, we are hopeful that livestock breeders will have a workable method of sex development in the not-too-near-close-future.

FOR SALE: Extra amount of rabbits in all colors. Address to University of Caligan.



THE MIT BATON SOCIETY PRESENTS:



An Evening With ELLA FITZGERALD



"AMERICA'S FIRST LADY OF SONG"

KRESGE AUDITORIUM

January 16, 1959



Tickets on Sale Now in Building 10



Gift certificate

Free

Value \$15
towards any Dance Course



Cambridge
dance studio

580 MASS. AVE.
CENTRAL SQUARE, CAMBRIDGE

This certificate good for 2 introductory private
dance lessons, for one or two persons.

DO NOT

WRITE DAD FOR MONEY!

EARN EXTRA MONEY
with the H. B. DAVIS CORP.

NAME BRANDS CATALOG
(separate dealer price list shows your cost)

**OVER 2000 NAME BRAND ITEMS
AT LOWEST WHOLESALE PRICES!**

Watches, Jewelry, Diamond Rings, Cameras, Typewriters, Pens & Sets, Hi-Fi Radios, Phonographs, Appliances, Housewares, Hardware, Cookware, Power Tools, Luggage, Leather Goods, Linens, Sewing Machines, Dinette Sets, Musical Instruments, Bicycles, Sporting Goods, Toys and many others.

You earn substantial, steady profits—in spare time—with our money-making catalog. No inventory—no investment—no sales effort! The NAME BRANDS catalog is your "store" and does the selling! Just leave a copy with friends, neighbors and watch the orders roll in . . . it's THAT simple!

Over \$1,000,000 in inventory is maintained at all times, in our own 8 story building, to assure immediate shipment or pick-up, and continuous supply.

SEND FOR FREE CATALOG NOW!

H. B. DAVIS CORP. (Dept. CL)

145 W. 15th St., New York 11, N. Y., AL 5-6666

"THE EDUCATED BUYER DEALS WITH DAVIS"

Enjoy Transcendental Atmosphere at the

BLUE SHIP TEA ROOM

where Russell Blake Howe
re-creates music of
Beethoven, Chopin and Liszt
HISTORICAL T WHARF

Site of World's Greatest
Fish Market 1882-1914



Foot of State Street—Atlantic Subway Station
OPEN EVERY DAY, INCLUDING SUNDAYS, FROM 12 TO 8 P.M.
FOR RESERVATIONS TEL: LA 3-8719—AMPLE PARKING



THE AMATEUR SCIENTIST

It has recently come to my attention that amateur groups in Xenia, Ohio, Americus, Georgia, and Potter Place, New Hampshire, are currently engaged in attempts to synthesize, from inorganic waste products, a working model of homo sapiens. Historically speaking these amateur scientists are not delving into a new field for amateurs, for we have definite proof of two such attempts (Lichen ben Caballah in 473 AD and Carmichael Speliotis in 551 BC). These ancient gentlemen were hampered by the lack of comprehensive theoretical knowledge of chemistry; however, they had an excellent pragmatic foundation in organic chemistry and utilized all this knowledge to construct their homo sapiens. Ben Caballah and Speliotis focused their attention on a way to construct their homo sapiens from organic waste; however, inasmuch as the population in their respective times was relatively low they couldn't find enough organic waste to build their homo sapiens and had to turn professional (ben Caballah became founder of a sect named after him while Speliotis became an intellectual on the left bank of the Aegean Sea). Although I believe that their method was theoretically and pragmatically better than our latter-day amateur groups (insofar as these ancients realized the essential nature of the homo sapiens) I

shall discuss the theoretical aspects of the inorganic method since the amateur groups in Xenia, Americus, and Potter Place have flooded the magazine with letters pleading with me to discuss the theoretical basis of the homo sapiens.

We are all familiar with Professor Norbert Weiner's work in cybernetics, in which homo sapiens is pictured as a telephone switchboard. So, the amateur scientist would do well to cultivate the friendship of a telephone repairman. Volku, a student under Professor Weiner at M.I.T., later broke with his master and drew the analogy to a sewerage system. The theoretical basis for these two views is the same, however, and their conclusions are both mathematically valid --- Weiner and Volku differ only in their use of picture language. Since their mathematical results can't be expressed in ordinary English, to overcome this difficulty, the two men, before their break, worked out a new language capable of expressing the symbolic content of their mathematical equations. With suitable education all men will eventually speak in this language, which, by the way, consists of dots and dashes (the difference between this new language and the Morse code occurs in the dots which in the Weiner-Volku mathematical symbolization of cybernetical conceptions is vertical). Professor Weiner developed a concise equation describing the communications system of man and, although there are some fundamental difficulties which he is currently working on, the equation is quite adequate, as a description. Given in the new Weiner-Volku language, we have
- - . . . - . = - - . . .

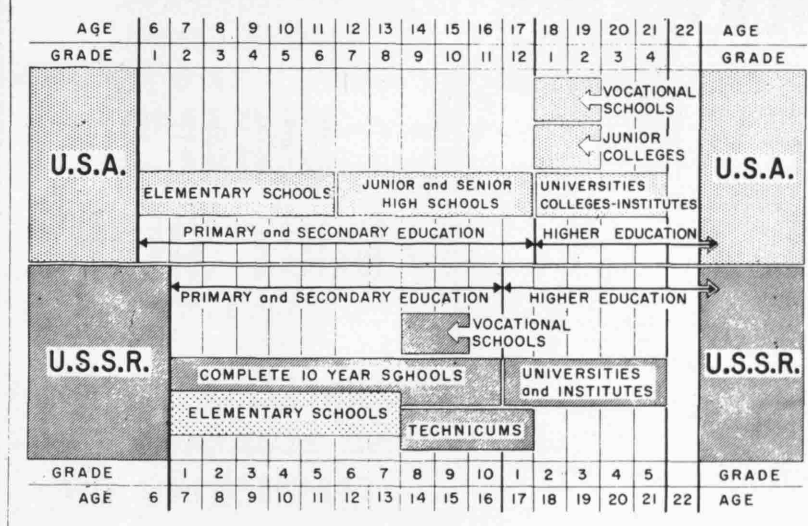
The equation is excellent, its effect and importance analogous to Einstein's famous equation $E = mc^2$; however, the difficulty occurs in the constant - - which must be adjusted for each individual case.

Weiner's analogy of the telephone switchboard falls short of perfection simply because it is an analogy. As Reichenbach would have said, "It is picture language." Weiner is on the right path in reducing man to mathematical equations, but so long as he retains his elaborate picture language he will hamper his ability to understand homo sapiens.

Until Weiner and the other cyberneticists can develop a better explanation of homo sapiens' thinking processes than what they have now, the amateur scientist must be content with a very rudimentary specimen, one which can be externally directed but which cannot do any thinking of his own, which, come to think of it, is not so very rudimentary.

Unfortunately, our amateur groups in Xenia, Americus, and Potter Place did not designate in particular what inorganic waste products they are utilizing. I suspect, if they are familiar with the work of T.S. Basames, that they are using slippery mercury compounds, krypton, heavy lead compounds such as lead tungstate (stolzite), phosphotungstic acid, sweat, and luck. Regardless of what compounds they use, though, the laws of thermodynamics and quantum mechanics do not hold. Neither do Newton's and Einstein's various equations. Nor Planck's constant. Miraculously enough the laws of sociology do hold, vis., Law Number One, take any group, break it up into as many

EDUCATIONAL SYSTEMS in the U.S.A. and U.S.S.R.



parts as you want, and you still have individuals in each part. The Prime Corollary immediately follows that given these individuals, send them to progressive schools. (See graph)

Gerarde F. Dingleberry, famous janitor at the University of Chicago, in a moment of extreme lucidity, extraordinary genius, and sheer inspiration, thoroughly demolished Basames' hypotheses by showing that they do not work. Through a series of intricate mathematical steps, involving matrix theory, set theory, number theory, and various other theories that even the mathematicians haven't theorized about yet, Dingleberry proved conclusively that because Basames assumed that intersecting empty sets were necessarily disjointed. (a most unpalatable assumption.) and that because he assumed that phosphotungstic acid would act

as a catalyst between the quanta (extraordinarily lax of Basames), then the krypton would tend to amalgamate and throw off supermans (see graph). Dingleberry suggested that homo sapiens could be constructed very simply from hypotheticodeductive (anhideous) chlorineoxygenbleach, a compound not readily available to the amateur scientist since not even the professional scientists know what it is. Dingleberry, with the classical mysteriousness so appropriate for men of profundity, asserts impatiently that everyone should know what the compound is and that if people would follow the reasoning in his obscure, abstruse mathematical models they would see for themselves.

The amateur is now in a quandry. Frankly, I myself do not see any justification for attempting to use inorganic

waste products when organic compounds have been theoretically shown to be better, easier to use, and closer to the essence of man than the inorganic compounds will eventually lead to frustration. Perhaps, which I doubt, Dingleberry will come through and provide the theoretical basis for the first homo sapiens to be constructed from inorganic waste products.

For those interested in constructing a homo sapiens from organic waste products, the process has been well delineated by Caballah and Speliotis (who were frustrated, as mentioned above, because of the low world population), and the theoretical work was done recently by Roger Estlin Grossmansch. Grossmansch assumed the existence of beercapacity and developed a concise mathematical system. His system works extraordinarily well, even when such untangibles as TVsitting, otherdirectedness, organizational phobia, gregariousness, bohemianism, etc. are taken into account. Robert L. Tittle and Claude M. Houghton of the General Electric Schenectady Lab, working with Eldon W. Raylor of Monsanto, have collected all the literature on constructing an organic-waste-product home sapiens. For fifty cents, in stamp or coin, the amateur scientist can receive their excellent kit which also contains defumigants and a gas mask. The address is Homo Sapiens Offer, Box 77, Chicago 77, Illinois.

Simeone's
ITALIAN-AMERICAN RESTAURANT INC.

CAMBRIDGE
Central Square
HARVARD ST. MASS. BOSTON AVE.

PIZZA
CHOICE WINES
IMPORTED BEERS
AIR-CONDITIONED COMFORT

FREE PARKING IN REAR

21-29 BROOKLINE ST ELiot
CAMBRIDGE, MASS. 4-9569

Circle 7-7949

Cafe

Folk Music

Y
A
N
A

Coffee House

778a Beacon Street Boston, Mass.
Opposite Kenmore Theater

BIBLIOGRAPHY

Readers interested in further reading on the subjects covered by articles in this issue may find the lists below helpful.

ANTIGRAVITY

INTRODUCTION TO MECHANICS AND HEAT. N. Frank. McGraw Hill, 1910.

ANTIGRAVITY MADE SIMPLE. O. von Forshtearess, Bubkiss Press, 1949.

DIE ZEITUNG UND VORSTELLEN DIESER ANTIGRAVITY SCHVARTZ. E. Schmotzig Berlin Publishing House, 1917.

THE MIGRATION OF AUTOMATA

INTERACTIONS IN MAN-MACHINE SYSTEMS. G. Splotskados in the Journal of Pathological Psychology, Vol. 18, Nov. 7, pages 43-58, Sleptover, 1938.

LEMMINGS AND THEIR ROLE IN SOCIETY. J. R. Killian in Proceedings of the Royalistic Society, Series G. Vol. 751, No. D 875, pages 1128-1305; Dismay, 1941.

MORPHOGENESIS AND THE METAMORPHOSIS OF AUTOMATA. M. Faraway in the Grundoon Lectures, Vol. 2, pages 107-118; 1951.

THE JUVENILE AUTOMATA. J. Arthur Huxleberry, Guernsey University Press; 1954.

ORGANIC CHEMISTRY AN EXPOSE

GENERAL CHEMISTRY. C. C. Stephenson Lecture notes pages 1107-1273

ORGANIC CHEMISTRY and the LAYMEN. J. Hargrove 2nd. preliminary publication. pages 4,5,6 and the bottom of page 7.

DEODORIZING YOUR HOME & LABORATORY. A. Stench. Arpege Publishing House. 1959. pages 2 and 169.

CONTROL OF SEX

SOCIAL BEAVER. M. I. T. pages 1-69

BIRTH CONTROL IN THE HIMALYIAS. Roberto Rossilina. Edited by I. Bergman and S. Das Gupi. Out of print.

HOW TO RAISE BABIES FOR FUN AND PROFIT. Dr. Lillian Gilbraith. Two vol.

SEE SEGAL for
Special Rates
to TECHMEN

SEGAL'S BODY SHOP

"SINCE 1917"

**SPECIALIZING IN BODY
AND FENDER REPAIR
REFINISHING ON
FOREIGN AND
AMERICAN CARS**

APPRAISER OF
AUTOMOBILE ACCIDENTS

TOWING SERVICE



306 MASS. AVE.,

CAMBRIDGE, MASS.

*DOWN THE RAMP OF THE
TECHNOLOGY GARAGE*

Tel. KIRKLAND 7-7485

ELSIE'S

Noted for the Best Sandwiches
To Eat In or to Take Out

The famous Roast Beef Special
Sandwich

KNACKWURST - BRATWURST
with Sauerkraut or Potato Salad
71 Mt. Auburn St., Cambridge, Mass.

ELSIE and HENRY BAUMAN

EL 4-8362



There's More Than Meets The Eye In
THE DIAMOND RING YOU BUY

All you can see is a beautiful ring and a price tag. But how can you relate the two and be sure of quality and value? How can you avoid an unwise choice in the diamond ring you buy?

The way to be sure is to choose a genuine registered Keepsake Diamond Ring. Quality in diamonds is judged by color, cut and clarity, and Keepsake's quality is clearly defined in writing for your protection. The Keepsake Certificate signed by your jeweler guarantees a perfect center diamond, regardless of style or price (or replacement assured). Keepsake also registers your ring permanently, assuring lifetime trade-in

privilege and protection against loss of diamonds for one year.

The center diamond of every Keepsake engagement ring is a perfect gem . . . free from flaws under ten-power magnification, with fine blue-white color and expert cut. And behind the matchless beauty of these lovely diamond rings stands the famous name Keepsake, symbol of quality and value for generations.

In making this important lifetime choice, be sure to look for the name "Keepsake" in the ring and on the tag. Many beautiful styles from \$100 to \$10,000 — at authorized Keepsake Jewelers only.



A. MIAMI Ring \$675. Also 225 and 450. Wedding Ring 225. B. ROLAND Ring \$400. Wedding Ring 125. C. BAXTER Ring \$225. Also 100 to 750. Wedding Ring 20.00. D. GWENN Ring \$125. Wedding Ring 42.50. All rings available either natural or white gold. Prices include Federal Tax. Rings enlarged to show details. ©Trade-mark registered.

.....
 Dating is really fun . . . when you know

THE ART OF DATING

by Dr. Evelyn Millis Duvall

An expert guide to happy, successful dating to make your teens the best years of your life. This fact-filled book is written by Dr. Evelyn Millis Duvall, famous author and counselor. REGULARLY \$2.50 in hard cover, this book is yours in the exclusive Keepsake edition for only 50¢ AND THIS COUPON AT ANY KEEPSAKE JEWELER'S STORE. If dealer is not listed in yellow pages of telephone book, write to Keepsake Diamond Rings, Syracuse 2, N. Y., for his name. Do not send money, please.

.....

A new idea in smoking!



Salem refreshes your taste

- menthol fresh
- rich tobacco taste
- modern filter, too

Ever dabble in a brook on one of Spring's first balmy days? That's how a Salem cigarette refreshes your taste. You get rich, full tobacco taste with a new surprise softness. The smoke feels comfortable as never before. Through Salem's pure-white filter flows the freshest taste in cigarettes. Smoke refreshed . . . smoke Salem!

Created by R. J. Reynolds Tobacco Company