A New Mosby Book

By C. E. TURNER, Professor of Biology and Public Health, Massachusetts Institute of Technology; and ELIZABETH McHOSE, Director of Physical Education for Girls and Chairman of Health Council, Senior High School, Reading, Pa. 428 pages, 164 illustrations. Price, $1.90

The pupil soon to leave the secondary school is concerned with effective living not only for himself or herself as an individual, but also with effective living in the home and in the community. This book gives a clear picture of desirable health practices and scientific facts which underlie them and its purpose is to help youth discover ways of effective living.

This text is rich and complete in factual material, presented in easily comprehensible terms. A self-check list at the close of each unit offers an opportunity for the student to note his progress toward becoming a well-rounded, self-directing individual. Adequate references are indicated for supplementary reading.

“Effective Living” carries sound, motivating and thorough instruction in personal hygiene. It is unique in the way in which it builds into the study program a practical and pertinent consideration of mental health, communicable disease, sanitation and community health problems.

Other Popular Books on Hygiene

PERSONAL and COMMUNITY HEALTH—This new edition presents material that has been brought close to the point of perfection. Its coverage of all phases of personal hygiene and community hygiene makes it complete. The subject “hygiene” is a science and it is handled as one in this book. This is done by basing it on a science—normal physiology. The author addresses his ideas to the student so as to make him feel hygiene is his own personal problem rather than a disassociated science. Well-illustrated, well-arranged and up-to-date, this new edition, printed on eye-toned paper, is an outstanding textbook for the classroom. By C. E. TURNER. 652 pages, 128 illustrations, 4 color plates. 5th Ed. Price, $3.00

PERSONAL HYGIENE—This book presents the essential, present-day knowledge of personal health within available time and space limitations and with enough anatomy, physiology, and other underlying sciences to clarify and support the health teaching. It is based on many years of health instruction, not only to college men and women, but also to students in schools of public health, medicine, dentistry, and engineering, to teachers, nurses, dental hygienists, and to the various age levels in the public schools. Teachers of hygiene who are offering separate courses on Personal Health have created the demand for this book. By C. E. TURNER. 335 pages, 84 illustrations, 3 color plates. Price, $2.25

---

The C. V. Mosby Company
Pine Boulevard
St. Louis, Mo.

Gentlemen: Send me the following book(s): ________________________________

( ) Attached is my check. ( ) Charge my account.

Dr. ________________________________ Address ________________________________
ADDRESS OF THE PRESIDENT OF THE AMERICAN MEDICAL ASSOCIATION

A three-point program to insure enough doctors for the nation's military and civilian needs and to avoid any bottleneck in the production of doctors and a stern warning to nurses that they are losing their place in the community was presented by Dr. Frank H. Lahey, of Boston, president of the American Medical Association, at the opening general meeting at Cleveland.

Point 1 in his program: Medical students and interns should not only not be drafted for army service but, as in England now, should not even be permitted to volunteer.

Point 2: Those definitely committed to the study of medicine and already in the premedical preparation period should not be drafted but permitted to continue through the medical course.

Point 3: Development of a quota system for selection of doctors for military medical service, such as has already been worked out in England.

"There has already been a greater number of volunteers from the South than from the North," Dr. Lahey pointed out in connection with this idea, "and there will probably be areas where, as a result of greater volunteering, the number of doctors available for the community will be too limited. Should the present situation become even more urgent than it is, it is conceivable that many hardships may be worked in communities."

The warning to nurses: Nurses may "educate and legislate themselves out of the important place they have held in medicine and in the community" if the present trend away from service to the patients and toward higher and higher standards of requirements for entrance and graduation in nursing is not checked.

"It is really no exaggeration," Dr. Lahey declared, "to say that, with many of the personal attentions to patients delegated to ward maids, the real art of nursing can be lost to the nursing profession."

The shortage of trained, registered nurses, increased by military demands, and the relatively high cost of nursing for patients suggests that practical nurses will have to be used to break the impending bottleneck.—Jane Stafford.

THE VIRUS OF INFANTILE PARALYSIS

The virus of infantile paralysis enters the body through the mouth, not through the nose as has long been believed, Dr. Albert Sabin, of the University of Cincinnati, stated at the meeting of the American Medical Association.

If this "working hypothesis," as Dr. Sabin cautiously terms it until further studies prove or disprove it, is correct, conquest of this dreaded malady may be greatly speeded. While Dr. Sabin said nothing about practical results of his findings, any one who knows the history of disease-fighting knows that far greater strides have been made in conquering disease such as typhoid fever, whose germs enter the body through the mouth, than dis-

ases such as the common cold, which enter through the nose. Infantile paralysis fighters, unfortunately, have seen so many promises of early conquest of the disease, such as the nasal spray blockade and vaccinations, fail, that they are naturally hesitant about expecting too much now.

Dr. Sabin's picture of what happens in infantile paralysis is, briefly, as follows: The virus enters the body by way of the mouth and establishes itself in the alimentary tract, where it multiplies, probably in the walls of the small intestine and the pharynx. It invades the nervous system by two pathways, one leading to the brain by way of the cranial nerves which supply the upper part of the tract or by way of the parasympathetic nerves from the lower alimentary tract, and the other pathway leading into the spinal cord by way of nerve fibers from the intestines. If the greater attack is along the first pathway, the illness will be of the serious bulbar type which affects the breathing muscles. If the attack is along the second pathway, the primary paralysis would be in the extremities.

In the non-paralytic and sometimes unsuspected cases, the virus is either limited in some way to the alimentary tract or an equilibrium is reached between the body and the virus before enough nerve cells have been destroyed to interfere with function and cause paralysis.—Jane Stafford.

SULFAGUANIDINE

Sulfaguanidine, the new sulfa drug that is proving a potent and swift remedy for bacillary dysentery and a life-saving aid in operations on the lower alimentary tract, now will be available to physicians generally.

Sulfaguanidine was developed by Professor E. K. Marshall, of the Johns Hopkins Medical School, in a search for a better sulfa drug than those already available for fighting pneumonia and streptococci infections. The peculiar property of sulfaguanidine of remaining largely in the lower alimentary canal when given by mouth, instead of being rapidly absorbed by the blood, led to its extensive trial as a remedy for infections of this part of the body, such as bacillary dysentery.

Infections with other germs in this part of the body are a great and heretofore unavoidable hazard in operations for the removal of cancer or correction of other serious disorders of the lower alimentary canal. Shortly after the discovery of the action of sulfaguanidine, therefore, Dr. Warfield M. Pior, acting chief surgeon of the Johns Hopkins Hospital and acting professor of surgery at the Johns Hopkins Medical School, tried it as a weapon against infection in such operations. Remarkable success with the use of the drug before and after such operations has now been reported.

Sulfaguanidine is made by the Calco Chemical Division of the American Cyanamid Company and will be made available to the medical profession through Lederle Laboratories, Incorporated.
MUSICAL ACOUSTICS

By Charles A. Culver, Ph.D.
Professor of Physics, Carleton College

This book presents an up to date and accurate account of the fundamental laws of acoustics as they apply to the production and transmission of musical sounds. It is intended for one-semester courses and requires a minimum of mathematics.

Contents: Nature and Transmission of Sound; Interference; Hearing; Resonance; Pitch; Quality; Musical Intervals and Temperature; Consonance and Dissonance; Musical Strings; Stringed Instruments; Vibrating Air Columns; Wind Instruments; Vibrating Rods and Plates; Acoustics of Rooms; Electronic Musical Instruments.

THE BLAKISTON COMPANY, Philadelphia

RECENT PUBLICATIONS
Carnegie Institution of Washington
Washington, D.C.

Pub. No.
507 Contributions to Paleontology; A Miocene Flora from Shantung Province, China. Quarto, 147 pages, 57 plates. Paper, $3.25; cloth, $3.75.


Part II. Physical Conditions and Correlation. Ralph W. Chaney and Hsen Hsu Hu.

517 Papers from the Tortugas Laboratory, Vol. XXXII. Octavo, 412 pages, 35 plates (5 in color), 127 text figures. Paper, $4.00; cloth, $4.50.

Comprises 16 articles by various authors.


Year Book No. 39 (July 1, 1935–June 30, 1940). Octavo, 326 pages. Paper, $1.00; cloth, $1.50.

Reports on current research from all the departments of the Institution.

The Carnegie Institution of Washington, Washington, D.C. has published some 750 volumes covering the wide range of its researches. Orders may be placed direct or through regular dealers. Advise subjects in which you are interested, and catalogue will be sent upon request.

DUO-SEAL VACUUM PUMP produces a higher, faster vacuum

Tested to pressure of less than .05 micron (.00005 mm)
Free Air Capacity—33.4 liters per minute

NOISELESS IN OPERATION—VISIBLE OIL LEVEL
GREATER DURABILITY AND CONVENIENCE

The exceptionally high vacuum is made possible by a patented second seal, which effectively prevents the diffusion of exhaust gases back to the intake side.

This two-cavity pump is a three-stage pump with two stages within one cavity backed by a third stage in the other cavity.

Perfect performance for more operating years are insured by the simplicity of the internal-vane movement, and precise machining.

Metal outlet chamber with a glass window on one side permits checking the oil level in the chamber when the pump is running.

W. M. WELCH SCIENTIFIC CO.
Established 1880
1517 Sedgwick Street
CHICAGO, ILL., U.S.A.
MALNUTRITION

War is declared against malnutrition among the less well-off portion of the American population low-income families as well as those on relief in recommendations that have come from the National Nutrition Conference for Defense.

No reduction in relief allowances under the emergency conditions is an important point. It is argued that a scarcity of consumer goods that threatens to drive down the real income through price advances warrants putting unemployed to work to make more consumer goods.

Employment of Negroes and other minority groups, no taxes on incomes insufficient to provide an adequate family diet, coverage of domestic and agricultural workers under social security are among the other recommendations.

Soybean, peanut and milk products that are low in cost and nutritious would be encouraged. Milk would be made cheaper and no skim milk would be wasted. Taxes that discriminate against margarine are protested.

Technically trained producers and students would be given selective service deferment in accordance with another recommendation.

Better feeding of defense workers is another recommendation, since added meals during the work period have been found to increase efficiency, reduce accidents and decrease absences.

Need for the training of cooks and other members of food staffs in restaurants, institutions, etc., was stressed.

There will be state, county, city and local nutrition conferences and committees if several recommendations are carried out.

The suggestions and reports of the nine sections of the conference that will go to President Roosevelt as the results of the three-day conference cover more than 12,000 words.—WATSON DAVIS.

THE WHEAT CROP

Mountains of wheat, bushels in absolutely astronomical number, are heaped up in America's grain elevators and storage bins, as another huge harvest awaits the reapers, with heads already well filled at the southwestern end of the Wheat Belt. This unprecedented accumulation of basic foodstuff is one of the country's severest economic problems, and in any but an abnormal time would be an unmitigated headache.

As it is, however, there are some redeeming features about this glut of grain, so huge that all the mouths in the country could not eat it up in less than three years, even if not another bushel were added. At least, that is how Vice-president Wallace, who as Secretary of Agriculture struggled for eight years with the problem, feels about it. When I saw him briefly, a day or two ago, he had this to say:

"In times like these, it gives us a comfortable feeling to know that the new wheat crop, plus the carry-over, will provide us with the largest supplies in history. While we also have a very large carry-over of corn, there is always a possibility that unusually dry weather in July and August may damage the growing crop, and in case of need surplus wheat can be substituted for corn in the animal diet. The proteins of the two grains supplement each other."

The potential economic headache in the wheat surplus lies in the fact that without Government support this enormous mass of grain would force prices down to levels ruinous to farmers. The new bill just enacted by the Congress and signed by the President, which supports the price by loans on wheat produced under AAA contract terms to the extent of 85 per cent. of "parity," is intended to keep the farmer's purchasing power abreast of the city man's.

Criticism has been leveled at this advance in the Government loan rate on wheat, and even some of the staunchest supporters of the AAA system have had twinges of doubt as to whether the increase should have been as great. Advocates of the new act, however, state that the expected rise, from about $1 to about $1.14 a bushel, can legitimately be held responsible for a cost increase of less than a quarter of a cent per pound loaf of bread. If the price of bread goes up more than that, they claim, the rest of the boost must be looked for elsewhere—in the pay envelopes of labor, or in the profits of the processor, or in that vague category styled "general overhead."

However, regardless of controversy over the price of wheat, the quantities of wheat now in sight are simply overwhelming. The carry-over, as of July 1 of this year, is estimated at 400 million bushels—more than twice what it was three years ago. To this will be added the crop now nodding toward harvest, which is expected to roll up to as much as 850 million bushels. Thus, on July 1 there will be in this country about one and a quarter billion bushels of wheat.

Nor is that all. Canada has a much larger carry-over than we have; it amounts to 565 million bushels. Argentina has a 160 million bushel carry-over, and Australia 73 million bushels. Add in the American carry-over and you have a total of nearly one and one fifth billion bushels of wheat now on hand in these four major exporting countries alone.

The current crop now growing in Canada, and next season's crop being seeded in Southern Hemisphere wheatfields, are not included. Omitted also are the Old World wheat harvests, which because of war conditions are both unknown and uncertain quantities.

The very climate itself has conspired to increase the golden flood pouring through the grain chutes. Fall-sown wheat came through the winter in good shape, and despite drought in the East this spring has matured a good crop. All up and down the Plains region, where a few years ago drought and dust storms blasted the crop, there have been heavy snows followed by abundant rains, so that spring wheat in the Northwest and fall wheat in the Southwest are in championship condition.

Where to put it all is one of the things that is giving gray hairs to farmers, wheat buyers, millers and Government officials. If all storage space still unused is filled up, and grain is stored in bags in old warehouses hastily made weather-tight, and wheat poured into bins vacated by some of the corn now being rapidly turned into pork and milk and eggs for our own defense workers and for
shipment to Britain, it may turn the trick. But it isn’t
certain yet that Western farmers will not have to do what
Canadian wheat growers did last year—just pile it up in
everous hills out of doors, for sheer lack of enclosed
storage space. Canada, by the way, is drastically re-
ducing wheat acreage this year by one fourth, despite
the war. Times have certainly changed since 1917!

This enormous reserve of unused wheat, which will keep
in good condition for several years if properly sheltered,
will stand America and the world in good stead if the
war should end in a general collapse of Nazi-dominated
Europe, crumbling into starvation-scoured anarchy.
Then wheat-crammed ships can rush to the unblockaded
ports, bringing to the peoples of the Old World the one
best medicine for the malady called despair. Food was
sloganed to win the last war. This time, food can win
the peace.—FRANK THONE.

THE FOOD SURPLUS
(Copyright, 1941, by Science Service)

Food may be the weapon used by defense officials to
build up the quantity as well as the quality of the de-
defenders of democracy.

Without some prompt action, America must face the foe
of slow national suicide through dropping birth rates.
But the mountains of wheat, floods of milk, and carloads
of golden fruit, now a food surplus, may provide rescue
from this mass self-destruction.

Several plans have been proposed for using food to
increase the size of families on the theory that parents
sure of food for them will have more children. The
American Youth Commission suggests extending the food
stamp plan so that food surpluses could be distributed to
families with three or more children and with incomes
below $1,500 a year. Another plan, considered by the
recent National Nutrition Conference, would give the
food to all families making only $1,000 a year or less,
whether they have children or not. This proposal would
extend the food stamp plan, now available only to families
on relief, to others on a similar income level who are self-
supporting. This plan, not directly aimed at increasing
the birth rate, might nevertheless have such an effect by
aiding low-income families to feed their children properly.

Still another plan might be adopted—one which was
tried successfully in Sweden before the war. This would
give the food to families with children regardless of their
income. Advocates of this food-for-children plan base
their proposal on the view that children are an asset to
the nation. As such, they must be fed. Parents of large
families should not be required to submit to investiga-
tion and prove that their incomes are inadequate and that
they are ‘‘worthy,’’ or otherwise be pauperized or hu-
miliated. The food stamps thus become an honor to
parents bringing up future citizens. They are not the
badge of charity or relief.

Impetus for pushing consideration of these plans for
using America’s food surpluses to build up population
comes in recently announced statistics of our population.
If present trends continue, America faces a decrease in
population. Our population growth has dropped to an
average of about 1,700,000 a year during the 1920’s to
less than 900,000 a year during the 1930’s, it is pointed
out by Dr. O. E. Baker, U. S. Department of Agriculture
population analyst. Since about 1932, we have not had
enough births to maintain permanently the number of
people we now have. The population will probably reach
its crest in about twenty years. And that is just the time
that elapsed between the first World War and the
present time.—MARJORIE VAN DE WATER.

SUN SPOTS AND MAGNETIC
DISTURBANCES

Light beams take only eight minutes to reach us from
the sun, and high speed atomic bullets cross the 92,900,000
miles intervening in a matter of hours. In addition, there
may also be some strange kind of corpuscles shot out from
solar disturbances which crawl along at the snail-like pace
(astronomically speaking) of as little as 15 miles a second,
and take weeks or months to make the trip.

This theory is proposed by Dr. Clifford N. Anderson,
of the Bell Telephone Laboratories, in a report to the
Institute of Radio Engineers. It would explain the diffi-
culties often encountered in trying to connect aurorae and
magnetic disturbances on the earth with sun-spots. There
seems little doubt that they are closely related, yet quite
often there are spots, and no terrestrial effects. Or else a
magnetic storm may occur, and no spot be apparent.

Studying records back to 1921, Dr. Anderson finds a
number of cases where large spots were followed at peri-
or periods ranging up to 90 days by marked disturbances, with-
out any other particular solar activity that might have
been responsible in the interval. From this he suggests
that the solar particles responsible for the earthly effects
do not travel at constant speed, as has been supposed, but
may have velocities ranging from 12 to 1,200 miles per
second.

‘‘This indicates,’’ he states, ‘‘the difficulty of trying
to forecast occurrences of individual terrestrial dis-
turbances.’’—JAMES STOKLEY.

ITEMS

Drought in the East and Southeast is becoming an in-
creasingly serious problem, as late spring merges into early
summer and temperatures, until now abnormally low,
tend toward higher levels. Reports collected by the
U. S. Weather Bureau indicate that grain crops in the
Middle Atlantic States are heading up on short straw,
with prospects of reduced yields. Fortunately, however,
the principal wheat areas from the upper Ohio Valley
westward have had at least the necessary minimum rain-
fall to make a good crop, and west of the Mississippi the
moisture condition is better than it has been for years.
In the Corn Belt, planting is going ahead rapidly, with
most of the seeding already done and the crop sprouting
well. Iowa reports corn planting to be eight days ahead
of average. Progress of the cotton crop is reported as
uneven, with rain badly needed in the eastern half of the
Gulf States, and nights a bit too cool for good growth.
Conditions are much better in the Texas-Oklahoma cotton
region.
NEW LaMOTTE COMBINATION URINE SUGAR AND ALBUMIN OUTFIT

This outfit was developed for the quantitative determination of sugar and albumin in the urine. The methods employed are authoritative and are chemically sound. In designing the outfit the convenience of operation was constantly borne in mind, and wherever possible modifications in technic were made, in order to secure maximum simplicity. Included in the LaMotte Combination Urine Sugar and Albumin Outfit are the complete series of standardized reagents, color standards for sugar and albumin, and calibrated glassware, together with full instructions for making the test. Price, $20.00, complete f.o.b. our laboratory.

LaMotte Chemical Products Co.
Dept. "H"
Towson, Baltimore, Md.

SUPERIOR CANDIDATES suggested on request to administrators and heads of departments in all fields of Science and Mathematics, and on every level of responsibility. Careful study given to requirements. If you are an individual scientist, ready for professional advancement, we would be glad to be of service to you.

AMERICAN COLLEGE BUREAU
28 E. Jackson Blvd.
Chicago, Ill.

BARGAINS in New and Used Glasses!

Sizes & powers of nature, sport & hunting glasses, $.60 upward. Telescopes, spotting & riflescopes, Microscopes, magnifiers & compasses, $1. upward. Repair work & goods guaranteed.

J. ALDEN LORING, OWEGO, N.Y. Catalog free, Box B.

ACCURACY PLUS ECONOMY

Laboratory workers find this inexpensive electric incubator has the accuracy they need; temperature change of less than 1°F. Hatches all kinds of eggs; also used for culture storage. Furnished with metal shelves or egg trays. Balance between temperature, moisture, and humidity is exceptional. Write for descriptive folder. AMERICAN ELECTRIC INCUBATOR CO. Dept. 8 New Brunswick, N. J.

The ELECTRO-MEDICAL LABORATORY
Incorporated
Holliston, Massachusetts
U. S. A.

Presents—
The Junior ELECTROENCEPHALOGRAPH. Culmination of years of research and experiment, this is a simplified, inexpensive instrument for recording electrical potentials of the brain.

SINGLE COMPACT CASE
18" x 12" x 9"

10-LEAD SELECTOR SWITCH

Requiring:
NO BATTERIES
NO SHIELDING CAGE
NO INK

Write today for literature

Makers of the ELECTROENCEPHALOGRAPH

The Measurement of Intelligence of Infants and Young Children

By PSYCHE CATTELL, Ed.D.

270 pages fully illustrated, cloth binding, $3.00

Sets of Test Materials:
Without Stanford-Binet Items $17.50
With Stanford-Binet Items $20.00

These tests are a downward extension of the Terman-Merrill Revision of the Stanford-Binet Scale, Form L, suitable for children between three and thirty months. Materials and procedures are the result of extensive research. The test items are conveniently packed in a suitcase so that the examiner can readily place his hands on any object without unpacking.

THE PSYCHOLOGICAL CORPORATION

The SCIENCE PRESS PRINTING COMPANY
PRINTERS OF
SCIENTIFIC and EDUCATIONAL JOURNALS;
MONOGRAPHS
and BOOKS

Correspondence Invited
LANCASTER, PENNSYLVANIA

THE SCIENCE—ADVERTISEMENTS
Vol. 93, No. 2423

58
Over 80 Sizes

NOW MADE IN U. S. A.
ADAMS MUSEUM JARS

NO. B1
BRAIN JAR

The BRAIN JAR illustrated is the newest addition. Unlike the other sizes it has a flanged top, so that it can be easily sealed with petrolatum or other lubricant. Size is 19 cm. high x 22 cm. wide x 22 cm. deep. Each $8.00. Case lot of 4, each $7.20.

Write for copy of Catalog No. 102 SC if you haven’t already received one . . . on your department letterhead, please.

CLAY-ADAMS CO., 44 East 23rd St.
Inc. New York, N. Y.

"NOW"
A NEW "COMPACT"
SELECTROSLIDE

to project your 35 mm.
SLIDES in
COLOR or
B/W

by
REMOTE CONTROL
at any distance

The complete outfit in case weighs less than 26 lbs. and is not larger than a Portable Typewriter. The "Compact" consists of the "Standard" Selectroslide with quickly interchangeable magazines for 48 Slides and built-in 200 Watt Projector with 3 lens condenser. Price without lens .......... $105.00
Same equipment but with additional automatic control (2 speeds) ...................................................... $175.00
Special well corrected 3 inch Proj. lens of great light transmitting power ........................................ $20.00
(Detachable lenses of miniature cameras from 2 to 5 inches focal length can also be used.)
Carrying case for entire outfit ...................................................... $13.50

SPINDLER & SAUPPE, INC.
86 THIRD ST. 811 WEST 7TH ST.
SAN FRANCISCO LOS ANGELES
Spencer announces a Direct Result Colorimeter which presents many important advantages over other present-day instruments.

1. Direct reading of the percentage of the unknown.
2. Inclined eyepiece for comfort.
3. Simple, accurate adjustment of artificial illumination.
4. Tilted plungers which dissipate air bubbles as they are immersed.
5. Cups which are easily taken apart for cleaning, with no necessity to check the zero adjustment.
6. Reverse position of instrument affords convenience in placing or removing cups.
7. A beautiful, easy to clean, modern design that combines strength and practicability.

Your nearest Spencer sales office gladly will demonstrate one of these new Colorimeters—or, upon your request, the factory will send to you complete descriptive information. Write Dept. T1.