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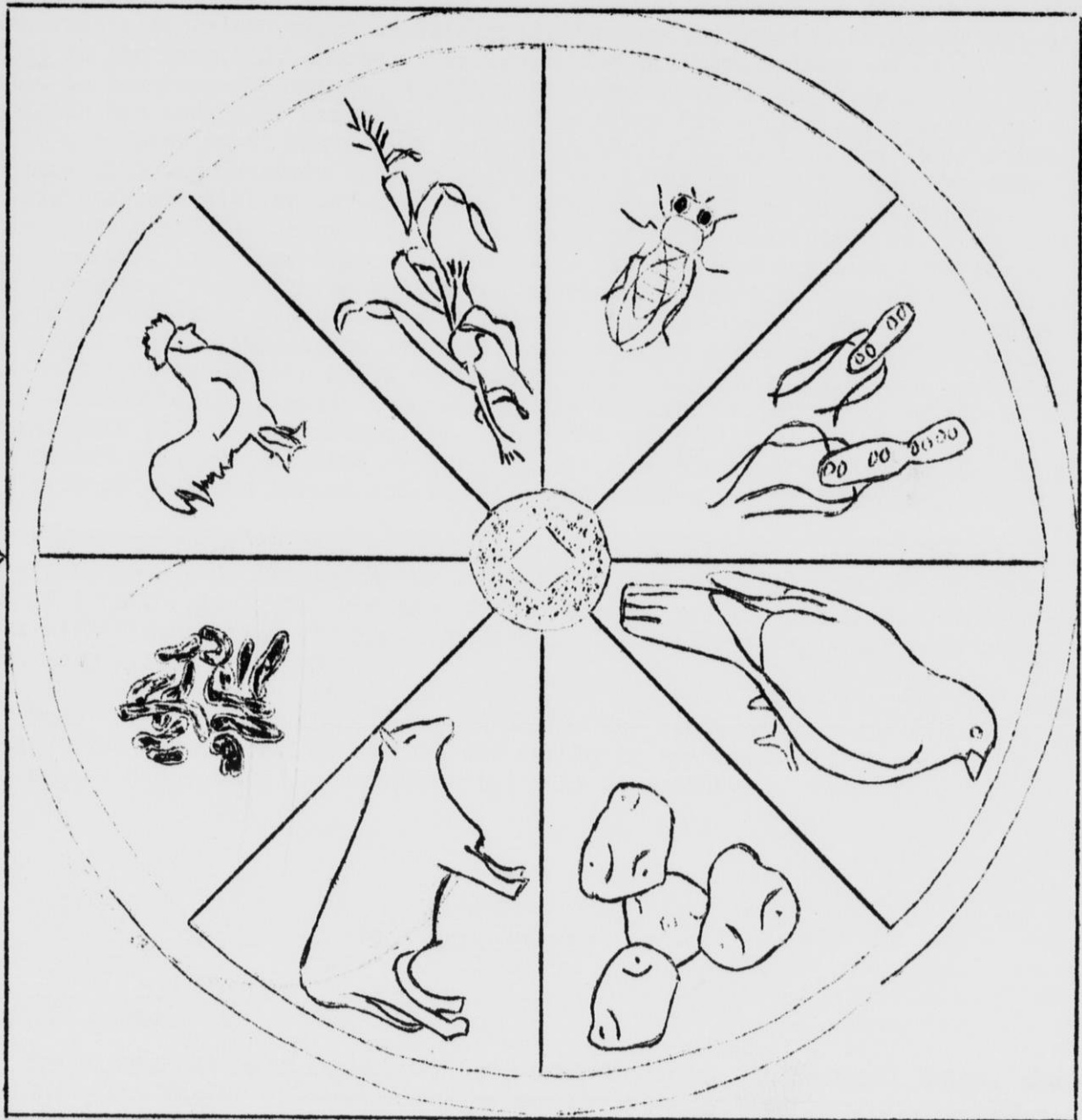
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THE GENOTYPE

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EDITORIAL

Greetings!! The permanent and darn-near-permanent members of the Genetics Department send their regards to you. It is the prerogative of the editor to make pertinent comments or offer sage counsel concerning the State of Things. However, this editor shall waive the traditional privilege and provide you only with the gruesome reality. So, in this spirit, we submit to you, our annual convulsion.

The department recently acquired a new staff member, Dr. P. U. Franistan, who is better known to his friends as "Bock-Beer" Franistan. This outstanding scientist recently received the "Frontenac Flapsaddle Award" in recognition of a remarkable technique which he developed, namely, the storage of Concentrated Effort in tin cans. Of course, this innovation has been enthusiastically accepted in America. Concentrated Effort is commonly referred to as Con-E. Dr. Franistan has made some wondrous discoveries since his arrival, for example: if, to a suspension of bacteria a mere milliwaham of Con-E is added (this extraordinary fluid is measured in wham units), the genes undergo a chain-reaction and disintegrate with an ear-splitting "phphphpt". At the same time wham-active particles are liberated. On the basis of this observation Dr. Franistan has formulated his "Gene-Explosion Theory". His findings may make even the H-bomb obsolete. Further, the editor has received information from a very reliable topsecretsource that Con-E is useful for polishing pericarp. Using this amazing substance, the immunogenetics group has isolated a new type of blood cell. This cell type is neither a red cell nor a white cell, instead, these cells are plaid - undoubtedly, a somatic mutation. As one might expect, the substance has a remarkable effect upon metabolism. Only the other day, the editors of Genetics placed a micro-milliwham of Con-E in their morning coffee; before the noon hour arrived they had turned out the next ten volumes of the journal.

For further information concerning this new development address your inquiries to Dr. P. U. Franistan, in care of Hasty-Tasty. His office hours are from 12 noon to midnight. The good doctor invites you to drop in and bend an elbow with him any time you are in Madison. The editor extends the same invitation from all of us to you.

Note: The cover design was prepared for the Genotype by Boris B(Boris). Bdlskv. He has informed us that he was unable to represent all groups in the drawing and hopes that the unrepresented will be merciful.

SOCIAL EVENTS

CHRISTMAS PARTY

The department held its annual Christmas dinner at the Memorial Union. Sam Scheinberg was master of ceremonies; he was assisted by Micky Greenblatt, Tom Roos and his wife, also, Nancy Worner and Theo. van Schaik. The featured event was a quiz in which members of the faculty were on the receiving end of the questions. They all made passing grades. Other games were planned, but Sam forgot to bring the dice.

SPORTS

Intramural activities elicited an enthusiastic response from grads in the Genetics Department. During the basketball season, five games were played on the armory courts. When asked about the outcome of these games, the players replied that "it is not the game, but the spirit that counts". Thus, it becomes evident that our team is not only athletically talented but it is gifted with modesty as well.

PICNIC

Micky Greenblatt and Helen Byers were the chief organizers for this year's picnic. We don't know if the Stock Pavilion has ever been used as a picnic grounds before, but in the face of an all-day rain it was certainly a more satisfactory spot than Burrows Park, which had originally been planned on. Undaunted by the weather, some forty persons came.

There was plenty of room for volleyball, and a couple of spirited games before eating sharpened the appetites of the players. Some rapid-fire catch was substituted for softball. A tractor complete with wagon and bales of hay was provided for the younger set to climb over.

Food was overabundant, and no one stinted himself on second helpings. All in all, an unexpectedly good time was had.

DEPARTMENTAL NEWS

Dr. Joshua Lederberg has received the Eli Lilly Award for his outstanding work in bacteriology.

SPEAKERS

The University has had several visitors who have given talks of interest to groups in the Genetics Department. They were John King of the Animal Breeding Research Organization, Edinburgh; Barbara McClintock of Cold Spring Harbor, New York; Maurice Sussman of Northwestern University; Everett Dempster of the University of California; Seiji Matsumura of the National Institute of Genetics at Misima, Japan; Werner Braun of Camp Detrich, Maryland; Drew Schwartz of Oak Ridge, Tennessee; Hewson Swift of the University of Chicago and Robley Williams of the University of California.

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* IN MEMORIAM *
*
* Dr. Charles Leonard Huskins *
*
* 1897 - 1953 *
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* * * * *

ANIMAL BREEDING GROUP

The only graduate of the group in the past year was Camille Bernard, who received his Ph.D in October; he is now with the Canadian government at the Lennoxville, Quebec Experiment Station.

Jim Chung has been continuing work with the rat colony. He is studying selection under different feeding conditions; the experiment is well under way. Results, so far, are very interesting.

There are two Mitchells working jointly with Dr. Chapman and Dr. Tyler on dairy cattle breeding experiments. Dave Mitchell, from Wisconsin, is studying the heritability of several body measurements; Ralph Mitchell, from Massachusetts, is studying the effect of inbreeding on production and certain type characters. Ralph and his wife had a son in March; his name is Kevin.

Art Reddon, from Edmonton, Alberta, has been working on an experiment designed to test the usefulness of live hog back-fat measurements at different ages, as an indication of carcass value. He is also helping with the collection of records in the boar-testing work in the state. Eric Bradford is working on analysis of the records from the latter project, which will be finished this year.

Elmer Kohlstedt, a graduate of Platteville State College, is working with Dr. Hauser of the Animal Husbandry department and Dr. Chapman on a study of several aspects of growth and development in identical and fraternal twins of beef cattle.

Vern Felts, instructor in Animal Husbandry, is continuing his work on the development of a ewe index, using farm flocks and records collected through the Wisconsin Sheep Improvement Program.

IMMUNOGENETICS

During the past year, we have had two visitors from Europe; both spent a short time with our group for the purpose of studying cattle blood groups. They were Eini Laakkonen from Finland and Jakob Bouw of The Netherlands. At the present time a third student, Jashabai Patel from India, is also working with cattle blood groups and is planning to take a graduate degree. We are pleased to have working

in the laboratory, Dr. Henry Gershowitz who is interested in the intraspecific inheritance of blood cell antigens in Columba livia. A former student, Dr. Cliff Bryan, has received an appointment at Howard University. The investigations of the J substance are being continued by Dr. Bill Stone. The analysis of antigenic specificities in Columbidae is being extended by Dr. Wilmer Miller; he is also studying other aspects of immunogenetics. Miss Joy Palm and Jack Stimpfling are pursuing their work on blood cell antigens in doves; Joy has been interested in the distribution of certain hybrid specificities in various dove species. Sam Scheinberg, Connally Briles and Martin Bacharach are working with blood cell antigens of chickens. Sam received his Ph.D this June and is planning to continue his work under a grant from the National Institutes of Health.

MICROBIAL GENETICS

Lysogenic systems in E. coli are being studied by Mrs. Dr. Lederberg, while Mr. Dr. Lederberg is interested in single cell isolations and conjugation mechanisms of E. coli. Dorothy Gosting, who is to Difco what Betty Crocker is to Pillsbury, has been engaged in studying possible sexuality in Agrobacterium. The genetic effects of the copper ion have occupied the attention of Helen Byers. Dr. Tom Nelson has varied interests, ranging from bacterial genetics to blonds. Larry Morse has just recently taken his prelims; the most recent reports indicate that he is still in a state of utter collapse. When he recovers, he plans to continue his experiments on galduction. Dr. Aleck Bernstein, who is otherwise known as "The Eloquent Englishman", is studying the immunogenetics of E. coli, also the acridine agglutination of Salmonella. We are happy to have with us, Dr. Boris Rotman; he came to Wisconsin from Dr. S. Spiegelman's laboratory at the University of Illinois. He is dividing his time between the Genetics Department and the Enzyme Institute. Another visitor to the lab was Dr. Sidney Rubbo from the University of Melbourne. Multiple crossing-over in Neurospora is being studied by Branch Howe; he has taken his prelims.

CYTOLOGY

Interest in this lab is now centered upon three diverse problems. Dr. Cooper is investigating stomatal abnormalities in a variety of chlorotic and variegated plants, as well as in several chlorophyll mutants of corn. Work on the cytology of Solanum species and their hybrids continues, with Kay Beamish staying on for a post-doctoral year. Both she and Betty Williams finished this spring. Dr. Swaminathan departed for India early last winter, and we hear that he is now working on the cytogenetics of rice. Steve Takats has left the potato group and is studying anomalies in microsporogenesis of Tradescantia and onion, particularly those having to do with the loss of chromosomal material in early prophase.

SWEET CLOVER AND HORTICULTURE

Homer Erickson and Jack Beckett, joint majors with Horticulture, have been carrying out research on cytoplasmic male-sterility in onion under the guidance

of Dr. Warren Gabelman. Homer Erickson's work involves pollination studies and the production of hybrid seed using the male-steriles as seed parents, and Jack Beckett is studying the nature of the factor responsible for cytoplasmic male-sterility. Kuell Hinson reports progress in identifying some of the genes that contribute to chlorophyll deficiency in hybrids between Melilotus alba and M. dentata.

PHYSIOLOGY OF REPRODUCTION

The following members of this group have taken their prelims: H. L. Self, Lou Baker, Bill Kidder and A. El Sheikh.

The repeat-breeder project with dairy cattle has been continued by Bill Kidder, Harold Hawk and Jim Wiltbank. A. El Sheikh is investigating the effects of heat treatment on reproduction in rabbits, also the relationship of nutrition to reproduction in sheep. H. L. Self and Lou Baker, working with swine, are extending their analysis of the interaction between breed and environment with regard to reproductive response and embryonic development; nutritional effects on reproduction in swine are also being studied by H. L. Self.

We have one newcomer; he is Young Mook Kim from South Korea. Information has been received from the University of Nevada that Wally Black and his wife have a new daughter.

CORN GROUP

The pericarp studies of Dr. Brink and his students are being continued.

Micky Greenblatt is Brooklyn's contribution to the group; prior to his arrival in Madison, Micky studied at Ohio State. His present interest is pericarp alleles independent of the P locus.

Theo. van Schaik has found that restrictive growing conditions decrease the mutation rate of variegated pericarp characters. He has taken his Ph.D and will return to the University of Pretoria in South Africa.

Elsayed Kassem received his Ph.D and has returned to Egypt where he will be employed by the government. His work here at Wisconsin indicates that inbred lines treated with nitrogen mustard show mutations in both plus and minus directions in regard to yield.

In addition to acquiring his Ph.D., Peter Barclay also recently acquired his Mrs. On June 2, Peter married Miss Judy Fisher in London, England. After honeymooning in Europe, a trip which will include visits to various labs and experimental stations, they plan to return to New Zealand where Peter will resume his work with the Grasslands Division of the Department of Scientific and Industrial Research, Palmerston North. In his doctoral thesis, Peter showed that the Modulator from a normal variegated, both at P^{RR} and transposed, would activate McClintock's Dissociator element.

Howard Clark is continuing his studies on the relative stabilities of different self-red and light variegated mutations; he is also interested in the frequency of back mutations of red to variegated.

Mei Fradkin is studying the possible relationship of variegated pericarp to gene mutation and chromosome breakage at other loci in the genome.

Nancy Worner is attempting to establish, by linkage tests, the chromosomal position of Modulator.

Fred Valentine is continuing his studies of orange variegated pericarp, its mode of inheritance and its relationship to the commoner form of variegated pericarp.

Don Wood has recently passed his prelims and at present is examining the dosage effects of Modulator.

The Army is receiving the undivided attention of Pvt. Walt Hartstirn. His address is 7071 A.S.U. Medical Co. (U.S.A.H.); Fort Belvoir, Virginia.

FUR BREEDING

In the fur-breeding department, Bob Cochrane is studying the physiology of reproduction in marten, mink and ferrets. W. D. Moore recently presented his Ph.D seminar on litter size in mink. Genetic studies are being carried out on chinchillas by Tom Roos. All three of the above-named gentlemen have tentative appointments with the Armed Forces.

DROSOPHILA LABORATORY

Ed Schwartz is continuing his studies of insecticide resistance. He finds no cytoplasmic or maternal effect, considerable variation among unselected lines, and a complicated pattern of cross-resistance to DDT, malathion, and other insecticides. Newt and Nancy Morton returned from Japan with a new son. While in Japan, Newt obtained data on linkage and consanguinity effects in man. Dominant lethals in bees are being studied by Bill Lee, who has a joint major with entomology.

POTATO GROUP

The past year has been an active one for the potato group, and there have been several major changes in objectives, facilities and personnel. Dr. Rieman is continuing his breeding work for resistance to common scab and is placing increased emphasis on resistance to virus X. All crosses made in this last year have included an X-resistant parent. In addition to breeding for resistance to virus X, the group is studying the behavior of X-free potato lines under field conditions and is just embarking on a program to test potato lines which have been inoculated with known mild strains of the virus.

We are all very pleased with the convenient, new potato storage and work building that has replaced the leaning old, red barn on the Research Farm at Rhineland. Although not complete it has already shown itself to be a much-needed addition to our facilities "up-north".

Doug Johansen is a new member of this group. He is comparing strains of the potato scab organism as isolated from potato plots that have grown resistant or susceptible varieties for a long period of time. Dick Stoufer, another newcomer, is studying the resistance of horseradish to Turnip Virus I. Don Young is still chasing that elusive and controversial "potato mycorrhiza".

Dr. Bob Hougas, director of the Inter-Regional Potato Introduction Station at Sturgeon Bay, just returned from a tour of potato laboratories in Great Britain and on the continent.

The Conference on Genetic Recombination was held May 19-21 at Oak Ridge, Tennessee. The following members of the Genetics Department attended:

| | |
|----------------------|----------------------|
| Dr. Peter Barclay | Fred Valentine |
| Dr. Aleck Bernstein | Dr. Theo. van Schaik |
| Dr. Esther Lederberg | Don Wood |
| Dr. Joshua Lederberg | Nancy Worner |
| Larry Morse | |

Dr. Joshua Lederberg presented a paper on recombination in bacteria.

TRANSLOCATION

| | |
|---------------------|--------------------------------------|
| Camille Bernard | Quebec Expt. Sta., Lennoxville |
| Wally Black | University of Nevada |
| Cliff Bryan | Howard University |
| Carl Campbell | Penn. State |
| Elsayed Kassem | Govt. Research Center, Egypt |
| Jan Rendel | Roy. Agr. College of Sweden |
| Frank Seto | Wisconsin Ext. Center, Wausau |
| P. D. Skaar | Biol. Lab., Cold Spring Harbor, N.Y. |
| A. Neimann Sørensen | Roy. Vet. and Agr. College, Denmark |
| Henry Voigtlander | University of Illinois |
| Cletis Williams | University of Georgia |

RECENT ADVANCES IN GENETICS

| <u>Ph.D.</u> | <u>Prelims</u> | <u>M.S.</u> |
|-----------------|-----------------|--------------|
| Peter Barclay | Jack Beckett | N. C. Buch |
| Kay Beamish | Connally Briles | Steve Takats |
| Camille Bernard | Homer Erickson | Don Young |
| Eric Bradford | Kuell Hinson | |

RECENT ADVANCES IN GENETICS (Cont.)

Ph.D.
 Cliff Bryan
 Kuell Hinson
 E. S. Kassem
 Wilmer Miller
 Sam Scheinberg
 Theo. van Schaik
 Betty Williams

Prelims
 Branch Howe
 Larry Morse
 Joy Palm
 A. El Sheikh
 Don Wood

M.S.

NEW STRAINS (IMPORTED AND DOMESTIC)

| <u>Name</u> | <u>Previous School and Degree</u> | <u>Major Prof.</u> |
|---------------------|--|--------------------|
| N. C. Buch | Indian Vet. Res. Inst., India; B.S. | Casida |
| Dr. Aleck Bernstein | Pub. Health Lab., England; M.D. | Lederberg |
| Bob Cochrane | Univ. of Virginia; B.S. | Shackelford |
| Micky Greenblatt | Ohio State University; B.S. | Brink |
| Doug Johansen | Univ. of North Dakota; B.S. | Rieman |
| Young Mook Kim | Chungnam Univ., Taejon, Korea; B.S. | Casida |
| Jashabai Patel | Coll. of Agr., Bombay State, India; B.S. | Irwin |
| Art Reddon | University of Alberta; B.S. | Chapman |
| Dick Stoufer | Kansas State; M.S. | Rieman |
| Don Wood | Colo. Coll. Agr.; M.S. | Brink |

ENTRIES IN HERD BOOK

| | |
|-----------|--|
| Clarence | Ladell Hulet - December 8, 1953 |
| Donna Mae | |
| Ralph | Kevin Mitchell - March 28, 1954 |
| Irene | |
| Newt | Amy Fryer Morton - April 17, 1954 |
| Nancy | |
| Max | Jole Richard Shackelford - Jan. 16, 1954 |
| Ruth | |
| Jack | Lynn Claire Stimpfling - Feb. 13, 1954 |
| Helene | |

LOOSE LINKAGE

Dr. Casida has in his stable
A gentle, brown cow called Mable
But bitter's her cup
She's sure to end up
With her innards spread out on a table.

Spring brings love 'twixt maid and lad,
And thus it seems so exceedingly sad
To turn a fly romance
Into a problem of chance,
But that's life in Dr. Crow's lab.

No doubt you've seen our genetics barn
So you'll know I'm not spinning a yarn.
Some say it's through
But that's not true.
It just doesn't give a darn.

Dr. Shackelford is an expert on mink
And other such animals, I think,
But I pity his plight
When the wind is right
For, good heavens, those varmints do _____.

Rally round, ye students of Cooper
We've found a technique that's really super.
Drink two jiggers of gin
With a lemon dropped in
And we'll examine our slides in a stupor.

(The ode presented below was composed by
the Corn Group in honor of and dedicated
to Dr. Peter Barclay)

There once was a fellow named Peter
Who drank his beer by the liter.
Said he with a smile
To walk down the aisle
I'll have to cross the Atlantic to meet 'er.

SEX LINKAGE

Peter Barclay and Judy Fisher
Eric Bradford and Elizabeth Engelka
Shirley Harvey and George Nilsson
Tom Roos and Marilyn Siker
Henry Voigtlander and Betty Jane Guyer

We regret to say that the Genetics Department lost one of its charming secretaries this year. Miss Gloria Way was recently married to Mr. Philip Craker of the U. S. Army. Philip's gain was indeed our loss.

Mary Harshaw filled in for Gloria until the middle of June of this year, at which time we acquired Jane Wenzel from Portage whom we hope will stay with us permanently.

NOTE: We wish to send the Genotype to everyone who is interested in receiving it, and therefore ask your cooperation in keeping our mailing list up to date. If you have not received the Genotype heretofore and wish to receive succeeding issues, let us know via a post card or letter.

STAFF

Editor: Jack H. Stimpfling
Ass't Editor: Steve Takats
Adviser: Dr. M. R. Irwin

CONTRIBUTORS

Eric Bradford
Kuell Hinson
Newton Morton
Fred Valentine
Don Young

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1953 PUBLICATIONS

- Plaut, W. S. The effect of chromosome knobs and B chromosomes on the variegated pericarp phenotype in maize. *Amer. Jour. of Bot.* 40: 344-348.
- Lederberg, Esther M. and Joshua Lederberg. Genetic studies of lysogenicity in Escherichia coli. *Genetics* 38: 51-64.
- Miller, Wilmer J. The time of appearance of species specific antigens of *Columba guinea* in the embryos of backcross hybrids. *Physiol. Zool.* XXVI: 124.
- Cavalli, L. L., J. Lederberg and E. Lederberg. An infective factor controlling sex compatibility in bacterium coli. *Jour. of General Microbiology* 8: 89.
- Irwin, M. R. Evolutionary patterns of antigenic substances of the blood corpuscles in Columbidae. *Evolution*, Vol. VII, No. 1.
- Karam, H. A., A. B. Chapman and A. L. Pope. Selecting lambs under farm flock conditions. *Jour. Anim. Sci.* 12: 148-164.
- Craig, James V. and A. B. Chapman. Experimental test of predictions of inbred line performance in crosses. *Jour. Anim. Sci.* 12: 124-139.
- Black, W. G., L. C. Ulberg, R. E. Christian and L. E. Casida. Ovulation and Fertilization in the Calf. *Jour. Dairy Sci.* 34: 274-280.
- Black, W. G., J. Simon, S. H. McNutt, and L. E. Casida. Investigations on the physiological basis for the differential response of estrous and pseudo-pregnant rabbit uteri to induced infection. *Amer. Jour. Vet. Res.* XIV: 318.
- Black, W. G., L. C. Ulberg, H. E. Kidder, J. Simon, S. H. McNutt and L. E. Casida. Inflammatory response of the bovine endometrium. *Amer. Jour. Vet. Res.* XIV: 179-183.
- Baker, L. N., H. L. Woehling, L. E. Casida and R. H. Grummer. Occurrence of estrus in sows following parturition. *Jour. Anim. Sci.* 12: 33-38.
- Bradford, G. E., A. B. Chapman and R. H. Grummer. Performance of hogs of different breeds and from straightbred and crossbred dams on Wisconsin farms. *Jour. Anim. Sci.* 12: 582-590.
- Miller, W. J. and C. R. Bryan. Serological differentiation of the homozygotes and heterozygotes in backcross birds following a species cross in Columbidae. *Proc. Nat'l Acad. Sci.* 39, No. 5: 407-412.
- Bryan, C. R. and W. J. Miller. Interaction between alleles affecting cellular antigens following a species cross in Columbidae. *Proc. Nat'l Acad. Sci.* 39, No. 5: 412-416.
- Wiltbank, J. N., W. J. Tyler, and L. E. Casida. A study of atretic large follicles in six sire-groups of Holstein-Friesian cows. *Jour. Dairy Sci.* XXXVI (10): 1077-1082.
- Lederberg, J. and P. R. Edwards. Serotypic recombination in *Salmonella*. *Jour. of Immunology* 71: 232-240.
- Oldemeyer, Robert K. and R. A. Brink. Effect on fertility at the tetraploid level of the genome derived from diploid Medicago falcata. *Agronomy Journal*, Vol. 45, No. 12.

Bradford, G. E., A. B. Chapman and R. H. Grummer. Time of farrow and performance in spring farrowed pigs. Jour. of Anim. Sci., Vol. 12, No. 4.

Swaminathan, M. S. Studies on the inter-relationships between taxonomic series in the section Tuberarium, genus Solanum. I. Commersoniana and Tuberosa. Amer. Pot. Jour. 30 (11): 271-281.

Casida, L. E. Prenatal death as a factor in the fertility of farm animals. Iowa State College Journal of Science 28: 119-126.

Lederberg, J. and E. L. Tatum. Sex in bacteria, genetic studies 1945-1952. Science 113: 169-175.

Kyle, W. H. and A. B. Chapman. Experimental check of the effectiveness of selection for a quantitative character. Genetics 38: 421-443.