Physiologic Dominance

**vs.** presence-absence

1. Multiple alleles
2. Reverse mutation \( w^+ \rightarrow w \)
3. AA fused up on Y chromosome

Concentration: inactive phase tend thus to be recessive & act as Dominant.

1. AA & multiple alleles support idea

\[ \begin{align*}
E = \infty & \quad w = \text{q.w.} \\
E = \infty & \quad w^2 = \text{homo} \quad \text{"light"} \\
E = 1 & \quad w^+ = \text{heter} \quad \text{"more"} \\
E = 0 & \quad w^o = \text{anti-morph} \\
\end{align*} \]

\( w^+ \) with \( w^o \) = anti-morph, meanup substrate for other products makes carrie upthetin than \( w^o \) does.

Neo-morph = brasethra.

Seriers alleles = one situatit
when enzyme = \( \infty \) get multiplicative effect

\( n/n = 1/2 \) ceiling

Hereditary Environment

Gene \\ Morphology

Ultimately genes external cause intsiusreca

Genes quae act cane gradienets set up cause gene, gradient

Array of enzymes

Determinant constraint

Complicated
Cytoplasmic Heredity

Cytosplasmic
Antigen
Heredity

not auto cases
non-autocases

taxonomic
differences
species
indicies

cases that do.

Phylogenetic Clues & Change

Diag. 1

Direct
Secondary
Morphologic

General
Local
Eye-fin-changes
Fin-loss

Faster interval
Purine

Complex patterns - simple
Non-genic act.
Relation Genes to Enzymes

Chromatogen + O2 → enzyme → pigment

Extracts from black + white Rabbits produce pigment. Enzymes differ from albumins of differently colored rabbits.

- Enzyme = Chromatogen + Chromatogen + Enzyme (pseudoflavins, tryptophan, many other colors)

Factor Interaction

1) Coat color of pig
   a) gene postdistribution
       ss — imperfect migration; also transforms black → yellow.
   b) intensity acts on half violet melaninogens
       C, C', C'' C''', C''''
       C'''''' = complete albinism

2) quality of color
   S, E, A, F, L, K, E

Final pattern from complicated interaction of 1 2 3 types of genes. Best illustrated diagram:

- competition effects — for sepia = yellow
- dominance effects — for brown = yellow
- reduction effects — for black = yellow
- interrelated effects — sepia + brown = yellow

Dracaena
  Yellow red at sites
  Brown processed end of somaticia
  White effects whole pigment processes
  Same color at root
  Others - proportional autonomy of eye colors except black

For interaction of factors — eye pressure, vitiligo, in lumpy.

- visual - ray pigments — chem, brown,
  tunneling, compact, causing, etc.
- red effect — best case of relative gene & cell color.
**Growth** = increase protein synthesis

Genes as models, RNA as replicative (seen non-recurrently)

**Hypothesis**

2. Predicts how to pass the cell.
3. They do not involve age or bacterial & graft.
4. Another epigenetic heredity is through duplicate enzyme.

**Explanation**

- Heredity. 
  - More prominence of haptens in enzyme.
  - Protein $\rightarrow \text{hapten}$

Hapten, $N = \text{Mendelian}$

**Differentiation**

- Irreversible, post 6

**Theories**

1. Wollman

2. Controlled mutation, mind wings

3. Epigenetic heredity, germ line involved & protein mediated enzyme

**Irreversible Demonic**

- Primary color: red = random
- Dorsal wing: $\alpha$ = constant
- Low $\beta$ = slight control
- Control of wing length by another gene

- Minor, gamma, om wings (dorsalless) not in females
Answers to 1st Q.

1. Common with Mendel.
   Mendel = ratios + linkage tests = apparent blending
   with factors + sex-gender
   Cytosplasmic = no chromosome relat, no ratios, or linkage tests
   receiv. crosses repeated backcross & f 3 genm/diff results
   test no crossing-over, cell division only.

2. Cytosplasmic = meristem, or cell's levels
   a. early stages = no diff in numbers of cells except in somatic
      or = cytosplasmic.
      not for animal as whole, however, the apparent
      cytosplasmic effect cannot in man / generation, threads out
      immediately = chromo. frag. effect. chromosomes depend
      on immediate f-parent, just previous
      affect & in effect, meiosis, sex - pure work before fertilization & seed.
   b. sexual, genetic = genetic effects. Very difficult to find
      other with effect in physiology - duchenne's disease
      swineboil is part of effect of pattern.
      the cytosplasmic effect in animals = general effect, not of compatibility.
      The recent changes the effects of cytosplasmic (as
      illustrated by case reymontria)
      or should have cytosplasmic
      a) Plasmod. effects - heredity, many mendel, heredity
      b) pollen fertility can united 3 in 4 with male
      c) fruit, plant, pedunculated - man united 3 in 4 with cytosplasmic.
      d) Brach my, male if factor carried other.
      Degree of cytosplasmic effect holds the key in correlation
      w. degree of cytosplasmic heredity.
      a. Lodric defines - no cytosplasmic effect. e.g. 13/3
      b. majority of reys. causes in Drosophila
      c. Lodric, C. Stunau / B. Brownia / others
      b. asymmetric, no "cytosplasmic"
Possible Relations Direct & Observed Char.

   - Metastasis breeders

2. Preal. enzymes allosteric allosteric rabbit, q, p, + no warmth, p, + buttes

3. Laminar mutations - cells dead
   - De form increases mutation endopeptidase

4. Hormone u + cat substances hormone produced in cells affect eye color.
   - Rose red, banana, q.

5. Inter-cell char.
   - General - same rabbit in sulphydryl dye (phenazine)
   - Pneal - neural crest egg
   - Gen-local - dwarf mice
   - Pneal-gene - eyes, polyplast short-tail.

   Pacing heterogametic growth

   Color vs. albinism rabbit.
   - Chrome - enzyme = cell product
   - DNA, WH upset - color habit

   Small cancerous queue.

   Interact only

   Output: Case of red cells set by muscle with food.
   Antigen in r.h.s. direct reflection
   - r = 0 when abnormal
   - r = 0, substance produced (metastasis)

Pattern met in gene
Pattern depends on complicated system of this.
Nature of the Gene

I. From breeding units

1. Effects depend on conditions but are consistent
   for given conditions.
2. Persistence & application irrespective of conditions - effects
   differ but gene itself does not. In acquired traits
3. Heterossexual parent is not transferred duplicated
   as of the new parent.
4. Rate of mutation varies directly w. environment
5. Not divisible into smaller units in their proper
   arrangements.
6. Arranged in linear unbranched system of which there
   are dp. no.

II. Physical - Chemical

1. Direct % absorb in cell itself - then to minute bands
   in chromosomes.
2. Size of small viruses - large protein
3. Not sol. not colloid.
4. High % nucleic acid.
5. Contained - simple protein, not nucleic acid.
6. 5000-10000 in Drosophila
7. Chromosome not polarized.

III. Correspondence Physical - Chemical, Cross-over Units

Originaly cross-over units act as physical units & descend
matter within their position, but range provides effects noticed:
1. Heterozygous rough > heterozygous normal = A/O > a
2. Ratel effect - barle.
3. New effects - pale, barle, rough, etc.
4. Weakening of dominance (of normal allele over recessive)
5. Unstable, dominant mutations - Plum
6. Unstable effect when +
c. Physiological properties
1. Autophagy - (Nephrosis)
2. Behaves like wise. organism
3. Controlled by cell division
4. Quantitative reproduction
   a. Synchronous to genes to cell conditions
      i. Duplicate + separation
      ii. Taking up - chiasm + synthesis
      iii. Synteny
   b. Asynchronous
      i. Chromosomes duplicate + separate
      ii. Elimination of pairing, chiasm, 2 kinara
      iii. Differential level of regulation

Factors influencing
1. Nutritional growth, metabolism, trans.
2. Sex
3. Age
4. Temperature (most interest) rise or fall increases
5. X-rays
   pregnancy  lanitie  spazia  tpanic  oscret  customarily
   (quantum)  (quantum)  X-ray  X-ray

Phases of Crossing Over:
1. Bunting:
   dupe in pachytene, connetics formed along
   shorting route.
2. Darlington:
   breakage due special strain & chance reconnection
Nature Gene Action - Intra-cellular enzymes

1. Immunological Allergen Specificity

<table>
<thead>
<tr>
<th></th>
<th>AAbb</th>
<th>aaBB</th>
<th>F1 AaBb</th>
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<tbody>
<tr>
<td></td>
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</tbody>
</table>

+ = take
- = reject

* Dominant factors in graft cause tissue RIs in that cell that doesn't have em.

"2-factor"

 reciprocal back to parents & F1

"3-factor"

 reciprocal back to parents & F1

Crosses shown: 9:3:3:1 = new linked character

Transplanting Red Cells: Human Blood

<table>
<thead>
<tr>
<th>Test serum</th>
<th>0 A B AB</th>
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<tbody>
<tr>
<td>0</td>
<td>+ - - -</td>
</tr>
<tr>
<td>A</td>
<td>+ - - -</td>
</tr>
<tr>
<td>B</td>
<td>+ - - -</td>
</tr>
<tr>
<td>AB</td>
<td>+ + + +</td>
</tr>
</tbody>
</table>

+ = OK
- = appl.
M+N = 2 alleles also

antigen of serum = direct reflection of gene specificity for specific human Rh locus

M = human Rh gene
N = human Rh gene

antibody in serum injured rabbit
prevented by human Rh gene

Rabb. To Hb. Hb, Hb. Hb
+ = OK
- = appl.

H2, Rhesus antibodies to in Rh in 3 of 200. 3 alleles behave independently in Rh locus.
Pine, April 22, Gene Action

may act in ovary, spore, leaf, etc...

Morgan & Sturtevant

Animal

1. Buck of evidence indicates no gene action, dyne makes no difference
   the a situation seems as if dye makes chromosome cause death
   of sperm.

Plants

Dark in color caused by action in 3:2:1 cell stage of gametophyte

Manhikatii: a genus; sterility indicated acts on pollen

Gameto spore: to act as lethal = serious far lethals.

Plants

Dilute brown: eggs of silkworm
2) Yellow manna: immature stage
3) Lept. 4 creaper, face
4) No rhizopus

Match to die in egg:

Favorable: lethal & lethal in egg

YY

no IV

XXX

xxx

XXX

Match to die in egg.

Defects in simple cell:

Favorable: deficiencies in somatic chromosomes kill

2 out of 3 = cell lethal

so all genes acting all time to some extent

genes play more superficial role.
Asaete gene action: green to show need of Fe in leaves.
1) Hilliennum - mutants
   yolk cells
   egg shape
   shell colors
   may be
2) Dominance: green vs white body color, leaves & gene
3) Picked in Norway, grown in U.S. Curly must that if first by XX = lethal
4) Seedling Hypothesis
   prob. gene acting in asacetae and determines clearance left or not

Index variety: $\frac{2}{7}$ vs same
Corn 73 73. chlo = minor
3 3 cl. = cytopl. due chlorophyll

Cray size = beet size & is discrete units
They breed true & sexual same species
The. break true & sexual same species
Recessive all ways along chromosomes
except = mutant allele that cannot be arranged as linear series
that phys = physical

Neomorph = hairy dominance
Crasshina mice

Three action
Antennipedia: antennae into feet
Antennae begin to shift, segments at some times ago
Antennapedia patterns

Cray White plant corn = chlorophyll, pollen self cility

Maternal effect
AA heterozygote acts thru bloodstream on asacetae
Heterospecies crosses between mice & corn showed
variability due entirely to genes. Heterocereus intermedia
recovered green sylling from wildcereus cya.
Y effects not A constant each dose adds units of Y. Y.

Correlate gene w. delicate specific changes. Differs in cell.

Dolphin: haplomets.

Best case of all chears we have.

Combined effect: add both genes. X-andins.

Thick fluid effects: addition of an I adds another.

Competition effects: I + Y

On-reduction effects: Y, I, A, B.

Quant. effects. define.

Laws of alleles for pericarp colors that mutate easily.

In many.

Neutral cytoplasm is measured by haplotypes, thus the cytoplasmic proteins duplicate themselves.

Neutral cytoplasm in germ line has to be protected (isolated).
Physical, drugs, graphs

Dissociation due to mutation of gene robbed

Factor interaction

Patterns
1) ss
2) age
3) sex

Melanin precursor: brown
Xanthie

Intensity

Combing with white series