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Abstract Papers

General

A WORD OF WELCOME

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TOOLS AND METHODS IN STUDYING MINNESOTA HISTORY

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INTELLIGENCE: AMERICA'S FIRST LINE OF DEFENSE

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ABSTRACT

The every-day decisions of our government in the conduct of its foreign affairs requires the maintenance of a modern intelligence service. We do not now possess such an organization, and as a consequence the United States has embarked on an unpredictable and dangerous foreign policy based on the fragmentary and conflicting reports forwarded by our representatives abroad to their respective home departments. Under current conditions of international relations, we find it impossible to determine the proper course to pursue in our relations with other governments. Such an unfortunate state of affairs is caused in large part by the lack of an adequate intelligence agency which can procure, evaluate, and integrate all the miscellaneous and often conflicting reports which are obtained from abroad. It is this lack of coordination on the highest levels of government that result in the vacillations of our foreign policy.

Intelligence has been defined as "unmasking the intent of the enemy." If we know the potential resources at the disposal of another power, we can shape our own foreign policy in a manner essential to the maintenance of peace. Without such knowledge, we are at a disadvantage in our dealings with other nations, and current news dispatches demonstrate only too clearly our shortcomings in this field. We once had an intelligence agency — the Office of Strategic Services — formed under the direction of Major William J. Donovan. During the war it was directly responsible for most of the intelligence used by the air forces in the China-Burma Theater, the procurement of intelligence via 1200 clandestine radio circuits in Occupied Europe, the surrender of 2,000,000 enemy troops in Northern Italy and the preparation of the greater part of all Joint Army, Navy Intelligence Studies (JANIS). This agency, created at

a cost of more than 300 million dollars was junked at the close of the war. The Director, and nearly every key individual withdrew from intelligence work when it became apparent that the OSS was to be broken up. These people took with them almost all of the knowledge and skill about intelligence that is available in the United States. Most of the group was bitterly disappointed to discover that intelligence was to be returned to the peacetime fragmentized condition which was in a large measure responsible for the debacle of Pearl Harbor.

Today intelligence is conducted on a day-to-day basis and is procured only through the various departments of the Executive Branch of government, each of which is restricted to the getting of information related to its own particular operations. There is little interchange of information between departments for each has learned that the Bureau of the Budget disapproves of operations which may be considered "borderline" to the particular department's field of interest. Each department has the right to withhold information from others "for the good of the department." Under such conditions the President and his close advisors cannot obtain an over-all picture of foreign affairs.

If the United States is to maintain its security, coordination of intelligence is essential, and the freedom of citizens must be assured by the permanent separation of intelligence from police powers. In order to attain adequate intelligence, the following items may be considered as an outline of the essential elements of a true central intelligence service:

1. The Agency responsible for the procurement and evaluation of intelligence must be independent of the action of any policy making arm of government.
2. The agency should be under the direction of a civilian with an advisory staff composed of the Secretaries of State, War and Navy.
3. The working personnel should be largely made up of civilians who possess regional or systematic specialization in one or more branches of science and social science. These individuals should be supported by a staff of competent naval and military diplomatic technicians.
4. Complete separation from any activities of a police nature, either at home or abroad.
5. Independent communications and transmission codes.
6. Civilian direction directly responsible to the President of the United States.
7. In time of war, the agency should be placed under the jurisdiction of the Joint Chiefs of Staff.

THE INTERRELATIONS OF THE SCIENTIST AND SOCIETY

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Biological Science

TRANSIENT LEUKOPENIA WITH SPECIAL REFERENCE TO THE MECHANISM INVOLVED

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ABSTRACT

It is well known that a temporary leukopenia follows the intravenous injection of a number of substances such as acacia, glycogen and so forth. The location of the leukocytes has been a matter of speculation. By means of motion pictures it was shown that the leukocytes adhere to the walls of the blood vessels, thus giving rise to a decreased leukocyte count.

THE INCIDENCE AND UNSOLVED LIFE HISTORY OF *Collyriclum faba*, THE CUTANEOUS FLUKE OF BIRDS

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ABSTRACT

Long known as occurring in cutaneous cysts in European song birds, *Collyriclum faba* has been found since 1907 in fourteen species of birds in the United States. For Europe, where the records go back to 1823, there are eighteen known hosts.

The known American hosts are: blue jay, *bronze grackle, brown thrasher, * chicken, cowbird, crow, English sparrow, purple finch, * redwing blackbird, robin, scarlet tanager, * turkey, white-breasted nuthatch, and * winter wren. Five (*) have been recorded solely from Minnesota. As in Europe, most of the records are based on a single observation.

The Minnesota records for chickens and turkeys were the first ones for non-passerine birds; they were based on epizootics affecting approximately half of the flock in both cases, and are unique except for one subsequent record for turkeys in southeastern France.

Because cases are rare and sporadic, little is known regarding the life history of the parasite and practically nothing regarding sources of infection. There is general agreement that infection occurs early in the life of the bird. Jegen, 1917, believed that the parents swallowed eggs when picking at the cysts, that they developed directly,

young flukes passing out with the excrement and wandering into the feather follicles of the nestlings. That this explanation is basically wrong was clear when it was shown that a typical miracidium developed, that infections developed chiefly near lakes, and failed to develop in poultry without access to such sources of aquatic life.

On the basis of field studies we suggested that the transport hosts were naiads and teneral dragonflies on which the chickens and turkeys fed avidly. It has been objected that many of the avian hosts are strictly granivorous. Field observations and published records of stomach examinations reveal that eight of the American bird hosts include dragonflies in their diet; the remaining six are largely insectivorous during the nesting season but specific records of dragonflies in their diet are lacking. We are interested in finding the transport host, not in proving that it is the dragonfly. The field is wide open.

AN ECOLOGICAL LIFE-HISTORY OF *Spirodela Polyrhiza* (GREATER DUCKWEED) WITH EMPHASIS ON THE TURION PHASE*

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This work, consisting of field observations and experimental studies under controlled conditions, was undertaken in order to obtain precise data bearing on the influences of environmental factors on the critical life-history phases of the greater duckweed, *Spirodela polyrhiza* (L.) Schleid., so that the ecological status of this and other species of duckweeds could be studied more critically.

Dispersal is accomplished chiefly by water currents, water birds, and aquatic mammals. Seeds are very rare and therefore can be of but minor importance. The author observed the utilization of duckweeds for food by carp, muskrats, insect larvae, slugs, snails, and eight species of birds. Competition, phenology, and effects on the habitat are described.

After a detailed morphological study, the *Spirodela* plant is interpreted as an abbreviated shoot bearing a perfoliate leaf, adventitious roots, and two bracts in whose axils all offshoots and flowers arise. The turion is a modified, non-buoyant, dormant plant. It is brought to the surface of the water by a gas bubble after which it germinates producing roots and vegetative offshoots. At least two to four vegetative generations must intervene between successive turion generations. In Minnesota turion formation begins in July

and continues until frost. Turion germination begins in May. Vegetative plants are unable to live through the winter.

Turion formation is induced by combinations of environmental conditions which maintain the photosynthetic rate at a level which is well above that which is required to sustain growth and respiration. High total light energy and ample carbon dioxide supply are two of the factors which may exert this influence. Especially at lower light energy values, turion formation requires the operation of factors which limit the rates of growth and respiration (photosynthate utilization) to levels that are well below those that the photosynthetic rate is able to sustain. Low temperatures and nitrogen-deficiency are two of the factors which may exert such an influence. Turions were produced experimentally at temperatures ranging from 10–35° C.

An after-ripening period must precede germination. The length of this period is determined chiefly by temperature, both during and after the turion formation. The period may be reduced to two weeks by pretreating at 10° C. or below, whereas it may be at least six months long at a constant temperature of 25° C.

WINTER FLORA OF LYMAN LAKES, NORTHFIELD, MINNESOTA

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ABSTRACT

The algal life of Lyman Lakes through the winter as observed over a period of years was described. The lakes are spring-fed and overflow over a series of dams throughout the year. While the surface ice retards the growth of algae in the lakes, there is abundant growth of Vaucheria, Oedogonium, Chaetophorales, and Diatoms in the running water of the dams and beneath the dams. The temperature of the water here does not drop below zero Centrigrade because of the continuous flow of water from beneath the ice. The water from the springs in the bottom of the lakes emerges at 6–10 degrees Centigrade above the freezing point.

Cases of asexual reproduction are described but no sexual reproduction has been observed at the low winter temperatures.