submarines. With the development of 100 octane motor fuels, the gasoline engine has equalled the efficiency of the best Diesels of to-day with the added advantage of greater maneuverability in airplanes and other motor vehicles.

All battleships, cruisers, transports and airplane carriers use fuel oil and lubricating oil in huge quantities, but there are no demands, even if far in excess of present requirements made upon the oil industry, which can not be fulfilled.

Petroleum gases have also come into their own in the past few years, making possible such products of military importance as alkylates, isooctane and neohexane motor fuels, which are vitally necessary as fuels for airplanes.

Synthetic rubber from petroleum is manufactured from benzene and ethylene yielding styrene, and by dehydrogenation of butane forming butadiene. The synthetic rubber has about 30 per cent. greater wearing quality and strength than natural rubber in tires now on the market. There are over 200 billion pounds of synthetic rubber potentially available from petroleum yearly.

The lower boiling hydrocarbons in petroleum from Pennsylvania, Mid-Continent, Michigan, East Texas and Kettleman Hills, California, are mostly straight-chain paraffins. Upon catalytic treatment at 932° F. and at atmospheric pressure these hydrocarbons can be converted into benzene, toluene and the xylenes. These compounds are basic materials for such high explosives as picric acid, TNT and trinitroxylenes. The quantities potentially available from the petroleum industry are at the rate of 85 billion pounds yearly. Commercial units to produce toluene and TNT from petroleum are now being installed.

In either war or peace, the United States of America has within its boundaries more than enough crude oil for complete self-sufficiency and could, if necessary, supply the petroleum products for the world's needs.

SCIENTIFIC EVENTS

UNIVERSITY COLLEGE, LONDON[1]

. . . HERE I regret to have to tell you that the college suffered badly, first by a land-mine and then by fire. The land-mine carried away the Great Hall and did a great deal of damage to roofs, windows, etc., in the main buildings of the college (apart from Foster Court which was practically untouched). The medical sciences building lost practically all its windows and the big physiology laboratory at the top of the building has lost most of its roof. A few days later there was a fire (due to incendiary bombs) which destroyed the libraries north of the main library and Flaxman Gallery, including a good many of the arts libraries and a large part of the physical sciences library. All this has meant that any attempt to carry on the teaching of medical sciences in our own building during this session is impossible. I am glad to say, however, that we have been able to make arrangements whereby the students in the faculty of medical sciences will be working in a large building near Leatherhead, which had laboratories which could be adapted for the purposes of the faculty. The staff have been indefatigable in making these arrangements and I have every hope that the continuity of our medical teaching, possibly even of some of our medical research, may be secured. Arrangements are being made to put as much of the equipment as is possible in various places of comparative safety. With regard to the rest of the college, we are removing the remainder of the library to a place of comparative safety, and have managed to redistribute the students among various colleges and universities.

[1] Excerpt from letter of the 11th of October, 1940, to Dr. Alan Gregg, from Principal Allen Mawer, of the University College, London, England.

The main disasters happened two or three weeks ago, and I should have written to you long since, but it was only yesterday that the Ministry of Information released the facts. . . .

At the present time, one can do little more than carry on, but we look ahead to the time when this nightmare is over and we can start to build up our work again.

DAMAGE TO SCIENTIFIC INSTITUTIONS IN LONDON

INFORMATION has recently been received from London of the bombing of the British Museum (Natural History) at South Kensington. The museum has been hit by both high explosives and incendiary bombs. The most serious damage was caused by an incendiary bomb which fell on the roof of the east wing and penetrated to the foreign herbarium of the Botany Department. A large number of plant specimens were destroyed, and many thousands of herbarium sheets were badly damaged by fire and water. It is understood that the department of entomology was also damaged. American botanists are of the opinion that many unrecognized type specimens of American and other plants were stored in the Foreign Herbarium, though a great deal of the most valuable material from several departments of the museum had been removed from London last spring. The near-by Victoria and Albert Museum has also been hit. Neither building is close to any military objective.

The London *Times* writes as follows: "The library of the Royal Society of Medicine is the finest medical library in Europe. It contains 150,000 medical volumes and provides an information service to the fel-