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this institute within the next five years. The course of study is expected to take several months. ...

Science

Problems and Judgments: LET THERE BE MORE DISCOVERIES. (By V. Tsaregorodtsev, Vice-Chairman of the U.S.S.R. Council of Ministers' Committee on Invention and Discovery; and Yu. Konyushaya, assistant director of the committee's discovery department. Pravda, Oct. 17, p. 2. 1,500 words. Condensed text:) ... Since 1957 the U. S. S. R. Council of Ministers' Committee on Invention and Discovery has entered 91 scientific discoveries in the State Register. ...

Among the achievements that have been the groundwork for new scientific and technical thrusts is the work of Ye. K. Zavovskiy, who verified the phenomenon of electronic paramagnetic resonance. This discovery has furthered the development of radiospectroscopy and given rise to many inventions. ...

In evaluating the activities of research and design organizations, ministries and departments and the Academies of Sciences should be guided by the number and significance of discoveries and inventions used in this country and sold by license abroad and also by the economic benefit to the national economy from their realization. The problem is to ensure that more and more work is carried out at the same level as the discoveries and inventions.

There are many scientific collectives in our country that are successfully coping with the problem. Over the past two years the staff of the U. S. S. R. Academy of Sciences' Physical Chemistry Institute, for example, has filed four applications for the registry of discoveries and over 200 for inventions. The committee has already registered two discoveries and issued more than 100 certificates of authorship. Patenting is being effected abroad with the goal of selling licenses for 15 inventions made in the institute. ...

Meanwhile, in a number of scientific organizations and higher educational institutions the practice of judging the staff members' scientific activity solely by the number of published works continues. The Siberian Institute of Terrestrial Magnetism, the Ionosphere and the Propagation of Radio Waves has been at work for more than 10 years now. Yet in this time its scientists have not filed one application to register a discovery. They have received only two certificates of authorship for inventions. At the same time the institute's staff members annually publish about 150 works and recently have made more than 40 reports at international conferences in various countries. This creates favorable conditions for the "leakage," from prior publication, of scientific and technical achievements and for their use by capitalist firms without cost.

We spoke above about the discovery of Academician Ye. K. Zavovskiy. On the basis of this discovery a number of instruments and means of automation were invented that were not protected in sufficient time by certificates of authorship in this country and by patents abroad. As a result, U. S. and Japanese firms have patented analogous instruments and are selling licenses for them at a profit, even to scientific institutions in the Soviet Union. For the same reason - failure to protect priority before the deadline - many semiconductor instruments made on the basis of discoveries of Soviet scientists continue to reward a number of capitalist firms with profits.

In our opinion, the need has arrived for examining certain legislative acts regulating the reporting of the work performed by a researcher. First of all this concerns the abolition of compulsory publishing of articles before defense of post-graduate and doctoral dissertations on the natural and technical sciences. We feel that an indispensable condition for the defense of such dissertations should be their patentability, i. e., that they contain discoveries or inventions.

Needless to say, far from all achievements may be qualified as discoveries. Since the beginning of the state registration of inventions more than 9,000 applications have come to our committee. Only one of 10 was accepted for

review, only one of every 100 registered as a discovery. The chief cause of this great "weeding out" lies in incorrect conceptions of what the subject of a discovery application may be. Often figuring in such applications are various design and technological efforts, the results of mathematical calculations refining the orbits of planets, and all kinds of hypotheses and unproved assertions.

The phenomenon of "unacknowledged discoveries" is also explained by the fact that their authors sometimes act at their own risk. Their reports are not heard at learned councils, no preliminary check on the novelty of the solution to the problem is made, and scientific discussions are not organized. Aside from everything else, this complicates and prolongs subsequent expert appraisal in scientific institutions, which according to regulations is not to take more than three months. Sometimes organizations that have been entrusted with reviewing applications for proposed discoveries violate procedure. Thus, as recently as the summer of 1968 the committee sent to the U. S. S. R. Academy of Sciences' General and Technical Chemistry Division materials on the application for a discovery by B. Deryagin, a corresponding member of the Academy, and Candidate of Technology N. Pedyakin: "The Phenomenon of the Formation of Super-Dense Water During the Condensation of Its Vapors." However, for the past two years the division has just "not succeeded" in examining these materials. A new expert examination had to be conducted, this time in the Ukrainian Republic Academy of Sciences' Chemistry and Chemical Technology Division and in other organizations. The result was full recognition of the researchers' achievements. In May of this year it was entered in the U. S. S. R. State Register of Discoveries.

Delays in scientific experts' appraisals or a nonobjective approach to the reviewing of applications could take from the author and the state their priority over an important discovery and retard further development of a promising problem. Therefore, the responsibility of scientific institutions for strict observance of deadlines and the objectivity and quality of the expert examination performed by them must be increased.

Thus we believe that fullest disclosure of discoveries of scientists is an issue of no small importance. This is the point: There have been discoveries that until now have not been legally recorded, that have not been registered in the State Register, because applications were not filed. Sometimes this happens because of the scientists' lack of information on copyright matters and, perhaps, because of their modesty or underestimation of the importance of protecting domestic priority. Moreover, many scientists feel that publishing a work is sufficient for acknowledging a discovery. ...

The Committee on Invention and Discovery is now taking steps to improve the protection of priority and state interests in the realm of discoveries. In particular, a new draft resolution has been drawn up on discoveries, inventions and rationalizers' suggestions. This resolution provides for further improvements in experts' appraisals and the legal protection of discoveries. Undoubtedly, all this will help solve one of the major tasks of Soviet science - placing achievements firmly at the service of the builders of communism.

THE BIRTH OF A GIANT. (By a Tass correspondent. Izvestia, Oct. 21, p. 3. Complete text:) Stavropol - Installation of the metalwork for the world's largest reflecting telescope has been completed. The telescope is being built at the U. S. S. R. Academy of Sciences Zelenchukskaya Astrophysical Observatory.

The 43-m. giant, which is to peer into the unfathomed depths of the universe, is being assembled far ahead of schedule. Under the leadership of the young engineers B. Kovalev and V. Labinsky, a brigade of specialists from the Leningrad Association of Optical Mechanics Enterprises and the 12th C. P. S. U. Congress Metallurgical Plant have been carrying out this work with a jeweller's precision. The entire rotating section of the telescope, weighing more than 600 tons, can be moved by one person. The astronomers themselves will not have to do this, of course. The telescope and the entire gigantic dome for the astronomical tower will be rotated

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New Solar Coronagraph at Sayan Mountain Observatory

A solar coronagraph is being installed at the Sayan Mountain Observatory in the Buryat Republic. The coronagraph lens has a diameter of 53 centimeters. A photograph shows workers assembling the panels of a geodesic dome which will house the device. [4]
(Summary: Photo caption; Moscow, Pravda, 16 October 1970, p 6)

Automatic Device Will Find Mirror Coordinates of Radiotelescope

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Workers of the Kirovakan Scientific Research Institute "Avtomatika" have developed and manufactured a new instrument for establishing the calculated coordinates of the mirrors of the Soviet Union's high-power radio-telescope "Rata-600."

The new automatic device was tested recently. The precision with which it finds the coordinates of the reflecting mirrors of the radio-telescope is 10 times greater than existing tolerances. The Institute will send the first group of these automatic devices to the Zelenchuk Observatory. [4]
(Complete translation: "Navigator for Astronomers," by B. Mirtchyan; Moscow, Izvestiya, 23 October 1970, p 4)

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Stratosphere Lab Photographs Sun

An automatic stratospheric observatory developed by Soviet scientists and specialists has successfully completed its third flight. It made observations of the sun at an altitude of more than 20 kilometers.

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"The stratospheric traveller delivered about 100 photographs of the sun," reported Yu. I. Vitinskiy, scientific secretary of the Pulkovo Observatory, "and these were not ordinary photographs but very clear ones with images of details which were 200 kilometers in diameter. Studying the sun from the earth it is possible to see spots with much larger dimensions, but small ones are still not studied as they are hidden by atmospheric vapors and other interference. The aircraft made it possible to avoid this. In addition, the observatory obtained for the first time 20 spectrograms which will aid in the study of the structure of moving gases in the solar atmosphere." [1]

(Complete translation: "Photographed the Sun...", unsigned; Moscow, Sovetskaya Rossiya, 24 October 1970, p 4)

Abstracts of Scientific Articles

Study of a Weak Chromospheric Flare

The author traces the change in profiles of the H α and H and K CaII lines in the same scan of an active region before, during and after a weak

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